

Newsletter

OF THE AMERICAN RESEARCH CENTER IN EGYPT



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Newsletter

OF THE AMERICAN RESEARCH CENTER IN EGYPT
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Editorial Note: In order to bring the Newsletter up-to-date, we are publishing a special double issue, with several features new to our regular readership. The summer issue is scheduled to appear in late August and the Fall issue in November.

This issue of the *Newsletter* could not have appeared in its present format without the unstinting, generous help of Dr. Ogden Goelet who put his remarkable expertise in computerology at ARCE's disposal.

THE BERKELEY MAP OF THE THEBAN NECROPOLIS

Report of the Sixth, Seventh, and Eighth Seasons

ACKNOWLEDGEMENTS

The Berkeley Map of the Theban Necropolis is a project of the University of California, Berkeley, and is funded by: Mr. Bruce Ludwig, Mr. William Howard, Mr. W. Lockwood Haight, Mr. Stan Wetzel, Archaeological Imaging, Inc., Mr. Bruce Heafitz, Dr. Burdette Ogle, Mr. Arthur Houghton III.

Project Staff, 1983-1986

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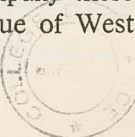
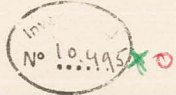
We wish to thank Dr. Ahmed Kadry and the members of the Egyptian Antiquities Organization for their continued assistance in our project. In Luxor, we should especially like to thank Dr. Mohammed el-Sughayer and Mr. Mohammed Nasser and their staff for making our work so much easier.

We also wish to thank the American Research Center in Egypt, its former Cairo Director Dr. Richard Verdery and present Director Dr. Robert Betts, and its administrative secretary, Ms. Amira Khattab, for their assistance. At the University of California, we would like to thank Miss Elizabeth Taylor, Mrs. Marion Lentz, Dr. Cherie Semans, and Dr. Daniel Foxvog.

SUMMARY

No area of the world contains as many famous and important archaeological monuments as the West Bank at Luxor. Yet, in spite of centuries-old interest in such features as the Valley of the Kings, the Tombs of the Nobles, and scores of other monuments, there exists no accurate or complete map of the Theban Necropolis. Fewer than ten percent of its monuments have ever been mapped and planned, and very few of these have been plotted accurately.

This project seeks to establish a survey network over the Theban Necropolis; to prepare a suitably detailed archaeological map with plans and sections of significant archaeological features; to publish these maps and plans with more detailed records of measurements, in an accurate and permanent form, and to accompany these graphic aids with a concordance and catalogue of West Bank archaeological materials.



Such a project as this will provide a useful tool for Egyptologists; but it also will play a significant role in the preparation of long-range plans for the protection and preservation of the rapidly-deteriorating monuments at Thebes.

During the first season of the project, in 1978, a grid network was established on the West Bank and several tombs in the Valley of the Kings were planned.

During the second season, in 1979, the project obtained complete vertical aerial photographic coverage of the Necropolis. Two sets of each of two complete runs were made, two at 3,000 feet to provide stereoscopic photography for topographical maps at 1:500, and two higher runs, at 5,000 feet, for maps at a scale of 1:2,000. In addition, the project continued mapping tombs in the Valley of the Kings.

During the third season, in 1980, the project obtained a full series of oblique aerial photographs of all archaeologically important areas at Thebes. It completed its basic mapping work in the Valley of the Kings.

During the fourth season, in 1981, the project mapped all accessible tombs in the Valley of the Queens and in several adjacent wadis. It also developed computer programs for the preparation of tomb plans, elevations, and axonometric drawings.

During the fifth season, in 1982, all tombs in the wadis at the southern end of the Necropolis were mapped and renumbered. Two hot-air balloons were used to take additional oblique aerial photography and to explore cliff faces for features of archaeological interest.

Since 1982, a series of short field seasons have been used to recheck and, where necessary, add to the survey notes of KV and QV tombs. In the laboratory, topographic maps of the Valley of the Kings have been prepared; computer-generated plans and drawings of KV tombs have been made; thematic maps tracing the

development and characteristic features of KV have been designed; final plans for the publication of the Valley of the Kings have been agreed upon. A series of three short seasons in the field were used to test the usefulness of various geophysical techniques for locating subterranean anomalies, including "lost" tombs, in the Valley of the Kings. Sites chosen for this work were primarily those in areas of proposed development for tourist facilities, in areas where it seemed possible to test various theories of ancient site selection, or in areas that seemed especially useful for checking the validity of the geophysical data obtained. These geophysical tests allowed us to relocate two tombs (KV 48 and KV 5) whose exact positions were unclear from earlier reports.

INTRODUCTION

The Berkeley Theban Mapping Project has not published an annual report since that of its fifth season in 1982, although it has conducted several field seasons in Luxor since then. There are several reasons for this. First, much of our fieldwork during the past four years has been devoted either to checking and redefining the field data from which our topographic maps and tomb plans will be drawn. Much of this work has been in the nature of a "clean-up" operation.

Second, the new work that we have undertaken has concentrated on testing the applicability of geophysical techniques to our survey, either in an attempt to relocate tombs that have been "lost" in the course of the last century, or in the hope of identifying archaeological materials that lie in the path of proposed additions or alterations to the Valley of the Kings before such work might threaten their condition. These tests, conducted during several short field seasons, formed a single unit that it seemed best to discuss within a single report after all preliminary tests had been completed.

Third, we have been anxious to conserve our limited resources, and have tried to devote as much time and money as possible to preparing the maps and plans of the Valley of the Kings for final publication before moving on to the next phase of fieldwork.

During early 1987, we completed our tests of the geophysical equipment, checked the data on which our KV tomb plans will be based, and made final design and scheduling decisions with the University of California Press for publication of the first BTMP Atlas volume. It is appropriate, therefore, that we now publish a report covering our field and laboratory work from September 1982 through March 1987.

GEOPHYSICAL SURVEY

Perhaps as many as seventy tombs were dug, or at least begun, in the Valley of the Kings during the New Kingdom. Today, over twenty of them are either inaccessible because they have been filled with debris carried by the occasional floods that strike the Valley, or because all traces of their entrances have vanished beneath water-borne debris or the backdirt of early excavators. In some cases, tantalizing glimpses of what these tombs might have contained may be found in the record of nineteenth-century travelers who were able to peer through doorways that are now buried under meters of rock and sand. In some cases, it still is possible to crawl down narrow tunnels or the spaces between rubble fill and ceiling and gain at least some information about a tomb's plan and size. But very little is known about most of these tombs, although they are obviously of importance to the history of the Valley and are no less entitled to be protected than their better-known and more accessible neighbors.

At the outset of our project, we determined that our map of the Theban Necropolis, if it were to be of the greatest possible value to Egyptologists, should include as much of that site's archaeological material as possible. This meant that we should prepare not only a topographical map of the area, but provide detailed plans of all its accessible subterranean features as well. To achieve this, members of our staff have slithered through narrow, debris-choked passages several hundred feet underground, spent hours in bat-infested chambers carefully measuring hundreds of architectural features, and rappelled thirty or forty meters down sheer cliffs to examine crevices for possible tomb locations.

By the end of our 1982 field season, we were confident that every subterranean feature in the Valley of the Kings that could be even partially mapped had been. But we also knew that there still were tombs in the Valley that could not be reached, and several that could not even be located. For the sake of our map's completeness, and in the hope of protecting those tombs that we knew generally to lie in the path of new construction in the Valley, we decided to explore ways in which "missing" tombs might be located in non-destructive, geophysical methods. Such tombs included KV 5, 21, 27, 28, 31, 33, 41, and 48-54, among others.

Early in 1984 we contacted Dr. Thomas Owen of Southwest Research Institute in San Antonio, Texas, about the possibility of applying geophysical techniques to the Valley of the Kings, and in February and March 1985 SWRI conducted a series of tests for us. The results of those tests, as their report indicates, were difficult to interpret because of the exceptionally high ground resistivity in the Valley.

We still were convinced of the potential usefulness of geophysical techniques in archaeology, however, and therefore were very receptive when Mr. Bruce Heafitz of Archaeological Imaging, Inc. and Mrs. Vincent Murphy of Weston Geophysical Corp. offered to test several other techniques for us. A series of lines were run for us in early 1986. These were set out across the hillsides in which we believed KV 5 and KV 48 were located, and at a series of geologically interesting spots in the West Valley. The results of these tests were then checked, in December 1986 and January 1987, by means of several small-scale sondages. As the geophysicist's report indicates, the magnetometric surveys were successful in locating KV 48, less specific but no less useful in locating KV 5, and of interest in identifying anomalies in the West Valley. The tests have made it possible for us to interpret more accurately the magnetometer's data from the Valley, and have given us reason to anticipate its successful application in future seasons.

It is worth repeating that the tests that we made with the magnetometer were not intended to locate "new" tombs in the Valley of the Kings. Rather, we deliberately sought to relocate already known tombs, particularly tombs in areas threatened by modern construction, and to test geologically different areas of the Necropolis. We were trying to determine the usefulness of a geophysical



Fig. 1. Aerial view of the Valley of the Kings. The locations of KV 5 (right) and KV 48 (top center) are shown with arrows.



Fig. 2. Valley of the Kings, looking south. KV5 lies at the end of the paved road.

technique, and this required looking for subterranean features whose location were roughly (but not specifically) known.

Ours was not the first use of such geophysical techniques in Egypt. They had been used at Giza nearly a decade ago and again during the last two years. More recently, they have been used at Karnak, as part of the work of Professor Redford and of the Brooklyn Museum. Since our project was the first to compare the effectiveness of several different techniques, however, and the first to use them so extensively, we are including some general and technical descriptions of the equipment in this report.

REPORT OF THE SOUTHWEST RESEARCH INSTITUTE

A. Introduction

During the past several years, advanced electrical geophysical methods have been developed by Southwest Research Institute for detecting and mapping subsurface cavities, tunnels, and abandoned mine workings. These methods have included scalar resistivity, audio magnetotellurics, and VHF electromagnetic techniques. The resistivity method is the most advanced of these techniques and has been used for detecting and mapping soil sinkholes, manmade tunnels, natural solution caves, and abandoned coal mine workings. In particular, this method has been developed as a specialized cavity detection system capable of collecting large amounts of precision field measurements with minimum labor in the field. Computer data processing techniques developed as part of the method provide unusually effective detection sensitivity and resolution of small cavities at depth-to-diameter ratios up to about ten to one, taking into account variations in surface topography.

Another of these methods, the VHF electromagnetic technique, is useful in cavity detection applications especially where the cavities are located in low-moisture geological materials. This method may be used either as a surface-operated ground-penetrating radar or in hole-to-hole electromagnetic transmission measurements. Under favorable propagation conditions, electromagnetic reflection signals may be obtained from cavity targets at depths of 25-30 meters below surface and hole-to-hole transmission signals may be received at distances of 60-80 meters. Cavity targets are observable with this method because of the unusual electromagnetic wave scattering characteristics of either air-filled or water-flooded zones in contrast with the undisturbed surrounding host medium.

Southwest Research Institute joined with the Berkeley Theban Mapping Project to collaborate in demonstration tests of the earth resistivity cavity detection techniques and the ground-penetrating electromagnetic technique in Egypt during the winter season of 1985. This work had the objectives of evaluating the performance capabilities of the two geophysical methods and their practical use in the geological environment of the Valley of the Kings.

The earth resistivity survey system is one developed by Southwest Research Institute for the U.S. Department of the Interior Bureau of Mines. Inquiries with technical

representatives of the Bureau of the Mines regarding U.S. Government interest in participating in the proposed tests in Egypt and the availability of the automatic resistivity system resulted in the loan of the equipment to the Institute for the time period needed to conduct the overseas field measurements. The ground-penetrating electromagnetic system needed for the tests is the property of the Institute and was dedicated to the planned tests for the time period required.

Preparations for the field tests included technical checkout of the equipment, obtaining Egyptian authorization for Institute personnel to participate on the Berkeley Theban Mapping Project, and packing and shipping of the equipment to Egypt. These preparations were successfully accomplished and the field activities were performed during a four-week period beginning in mid February 1985.

The primarily field tests emphasized the use of resistivity measurements at a selected location in the Valley of the Kings overlying a known tomb and at the suspected location of a "lost" tomb. Brief tests were conducted using a VHF electromagnetic probing system to measure the preparation parameters of the limestone rock along subsurface paths between adjacent tombs and between a tomb and the overlying surface. For these purposes the site survey traverses were laid out with the assistance of the Berkeley Theban Mapping Project and the ground contacting electrodes were installed in the talus-like surface overlying the tomb targets. The resistivity survey at a known tomb target was located over the tomb of Ramesses IV. The resistivity survey site associated with the "lost" tomb was located near the tomb of Ramesses IX. In the case of the known tomb survey, the traverse line was oriented perpendicular to the tomb passageway at a position where the underground cavity was at a depth of 25 meters below the surface.

The electromagnetic tests were brief and were directed only at determining the effective propagation distance attainable through the limestone rock at the Valley of the Kings. For these tests, the transmitter unit was installed in the tomb of Yuya and Thuya and the receiver was installed at several positions in the nearby tomb of Ramesses III and on the surface above the transmitter location. With pulse propagation measurements along several propagation paths of different lengths, the pulse signal attenuation and velocity of electromagnetic wave propagation were derived.

B. Summary of Earth Resistivity Surveys

Initiation earth resistivity tests indicated that the ground resistivity in the Valley of the Kings was exceptionally high and that the metal electrode contact with the surface was very difficult and unreliable in the talus-like limestone surface. Nevertheless, emphasis was placed on applying automatic earth resistivity measurements to the cavity targets because of the general success of the method in previous cavity detection applications. The principal field efforts were applied to the traverse line over the tomb of Ramesses IV. Quality of the

field data was difficult to determine since there was no prior experience in operation the automatic system in such high-resistivity ground. As a result of this high-resistivity condition, however, the measured data were found to be of poor quality because of geologic noise at the surface and coupling effects between the source current cables and the potential measurement cables. Extensive data processing and analysis was applied to these data with no conclusive results in detecting and delineating the known cavity target. Several computer simulated tests were performed to generate surface measurement data characteristic of the tomb cavity anomaly and the typical geologic noise effects to establish practical limits of the resistivity surveys technique under the conditions experienced in the Valley of the Kings. Although these simulated tests were somewhat idealized in their response to the tomb target, the results indicated that geologic noise alone could be sufficient to obscure successful detection of the cavities of interest.

In general, the resistivity survey efforts indicate that this method is relatively impractical for use in the rocky and dry ground of the Valley of the Kings. The limitations are associated with the difficult of making good and consistent electrical contact with the surface terrain to inject the current and for accurately sensing the potential gradients on the surface. The high resistivity of the ground at this site does not impose an intrinsic limitation on detecting the tomb cavities; however, the time-consuming field efforts needed to assure high-quality field data make the method impractical for us.

C. Summary of VHF Electromagnetic Tests

Although the VHF electromagnetic tests were not given high priority during this field outing, the method has valuable operating advantages in the high-resistivity ground conditions and rough surface terrain at the Valley of the Kings. With emphasis on the earth resistivity surveys, use of the electromagnetic system was deferred until the last few days of the field activities. Even so, the results of these tests were very successful in obtaining useful electromagnetic pulse transmission signals over several propagation paths between the tombs of Yuya and Thuya and Ramesses III. Also, successful transmission was observed from tomb to surface through the overburden limestone rock overlying the tomb of Yuya and Thuya. Quantitative results of these tests show that the average dielectric constant of the limestone rock is 5.1 at this site, corresponding to a velocity of propagation of 44 percent of the velocity in free space. The excess attenuation of pulse signals in the 30-MHz to 300-MHz frequency range is approximately 0.59dB per meter. The implication of these results are that, with proper application of VHF ground-penetrating electromagnetic techniques operating as a downward radar system, detection of tomb cavities within a depth of about 25 meters below the surface should be practical. Moreover, since this technique does not require contact with the ground, it will not be impaired by the talus-like limestone surface of the ground. This technique can be specialized to

the survey requirements of the Valleys of the Kings to provide a very practical and useful geophysical tool applicable to the tomb mapping objectives of the Berkeley Theban Mapping Project.

REPORT OF WESTON GEOPHYSICAL CORPORATION AND ARCHAEOLOGICAL IMAGINGS, INC.

A. Introduction

Geophysical fieldwork undertaken in the Valley of the Kings and the West Valley by Weston Geophysical Corp. during March 1986 was followed in December 1986 and January 1987 by additional field measurements and digging at five locations. The work was supported by Archaeological Imaging, Inc.

Tombs KV 5 and KV 48 in the Valleys of the Kings were located as a result of these "archaeogeophysical" efforts, verifying the usefulness of geophysical prospecting techniques for detection of tombs in the Theban limestones. Three geophysical anomalies in the West Valley were also excavated: all were shown to be caused by natural geological conditions. This combination of positive and negative results has been very informative and will greatly aid future geophysical exploration for Theban tombs.

Three geophysical methods were used during the March 1986 field program: ground-penetrating radar (GPR), seismic refraction, and magnetometry.

Magnetic measurements acquired during March showed excellent correlation with known tomb KV 49, and Weston decided to obtain magnetometer data with the magnetometer sensor close to the ground surface to enhance any anomalies caused by tombs or tomb entrances.

Background information regarding magnetic measurements, GPR and seismic refraction profiling are included below. Photographs of Weston's GPR and seismic instrumentation being used in Egypt are shown in figs. 3 and 4.

Magnetic profiles from the KV 48 area are shown in fig. 5. Data from March and December are shown superimposed on the same axes. The most recent data were obtained with the magnetometer sensor mounted closer to the ground surface; the shorter distance between the sensor and the tomb accounts for the enhanced appearance of the December data.

Because of the excellent correlation between the magnetic data and known tomb KV 49, the suspected location of tomb KV4 48 was considered the best place to undertake a sondage in the Valley of the Kings. This assumption was well-founded: the entrance to tomb KV 48 was encountered after only a few hours of digging.

The applicability of magnetometry to tomb detection thus established, magnetic measurements were next used to refine the suspected location of tomb KV 45 originally inferred from GPR data. Several magnetic profiles were obtained along the traverses shown in fig. 6, revealing low magnetic values over what later proved to be the large

pillared chamber within KV 5. Excavations were initially begun at these relatively large amplitude magnetic lows, but were extended downhill when the bedrock surface was encountered. The entrance to KV 5 was finally encountered near the edge of the parking lot shown in fig. 7.

Concurrent with the KV 5 and KV 48 investigations, three test excavations were conducted at GPR anomaly locations in the West Valley (fig. 8); at one of the three locations, a low velocity seismic anomaly was also detected. Examples of these GPR records are shown in figs. 9, 10, and 11. Magnetometer profiles were conducted at each site prior to test excavations, but significant magnetic anomalies indicative of tombs were not observed: magnetic variations were only plus or minus 2-3 gammas along most of the profiles.

All three of the West Valley GPR anomalies were shown to be related to natural geological features. Anomalies on GPR records "A" and "B" (figs. 9 and 10) were identified by the test excavations as erosional surfaces. Stream-worn boulders surrounded by very tightly packed silts and sands were found at both of these sites, thus indicating a natural erosional origin.

The strong reflector of limited extent shown on GPR record "C" (fig. 11) was apparently caused by a large shaley boulder surrounded by limestone fragments, silts, and sands. A two-inch-thick void may have contributed to the unusual strength of the GPR reflector.

B. Magnetometer (Total Field) Measurements

The magnetic method is a versatile, relatively inexpensive, geophysical exploration technique. Aeromagnetic surveys and deep-water marine studies are commonly used as a reconnaissance tool for tracing large-scale geological structures. Land and coastal water marine data are more useful in tracing smaller, more localized geologic structures, such as mineral and ore deposits. Land and marine surveys yield more detail and higher resolution, since the measurements are taken closer to the anomaly source. Land and shallow water magnetic data are commonly used to locate larger buried, man-made objects such as pipelines, barrels or other buried metal objects, and smaller objects such as those involved in archaeological prospecting.

Earth Magnetism: Magnetism is a "potential field" method. For a given magnetic field, the magnetic force in a given direction is equal to the derivative of the magnetic potential in that direction. The source of the earth's magnetic potential is its own magnetic field and the induction effect this field has on magnetic objects or bodies above and below the surface. The earth's field is a vector quantity having a unique magnitude and direction at every point on the earth's surface. This magnetic field is defined in three dimensions by angular quantities known as declination and inclination. Declination is defined as the angle between geographic north and magnetic north, and inclination is the angle between the direction of the earth's field and the horizontal. The earth's magnetic field is measured in "gammas" (where 1 gamma = 10^{-5}



Fig. 3. Ground penetrating radar equipment, showing sample field data.

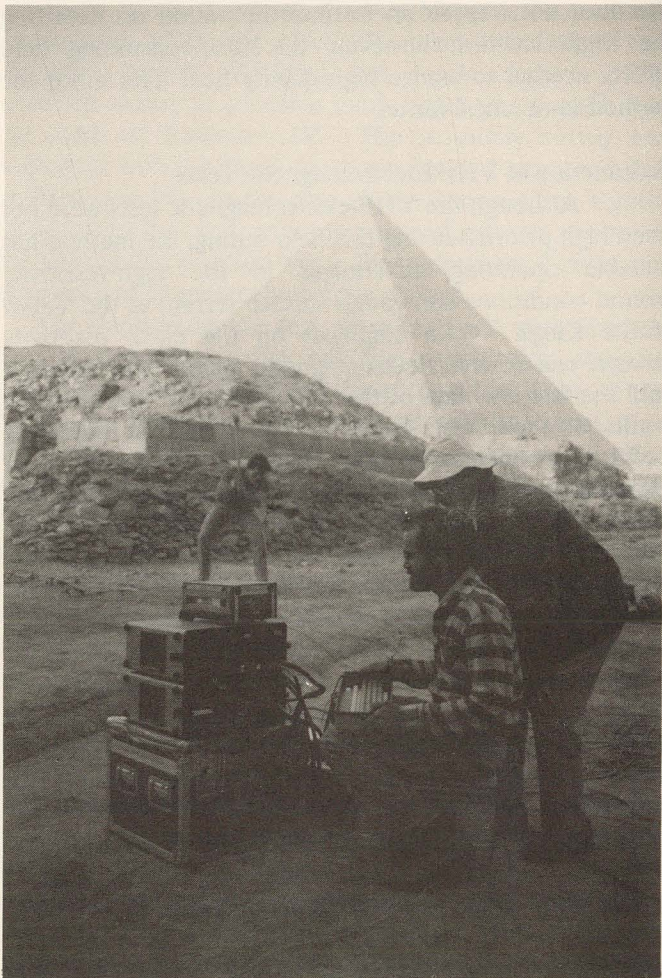


Fig. 4. Weston Geophysical's seismic data-acquisition system.

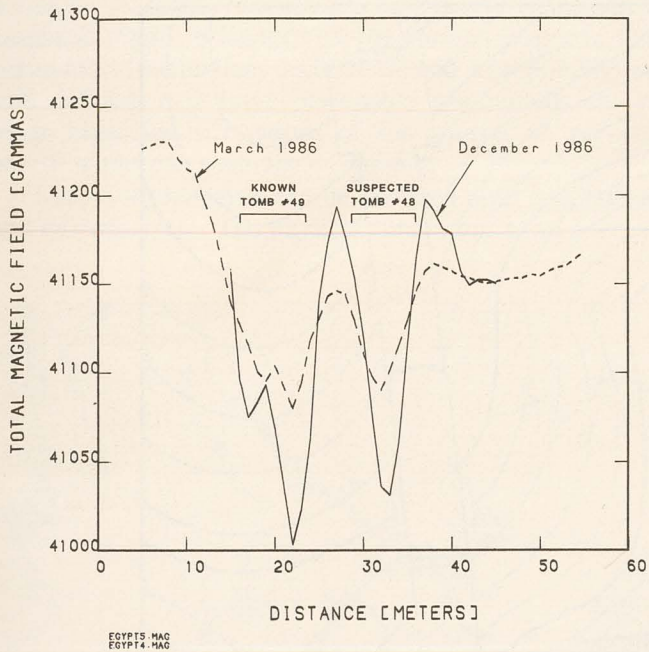


Fig. 5. Magnetic profiles in area of KV 48.

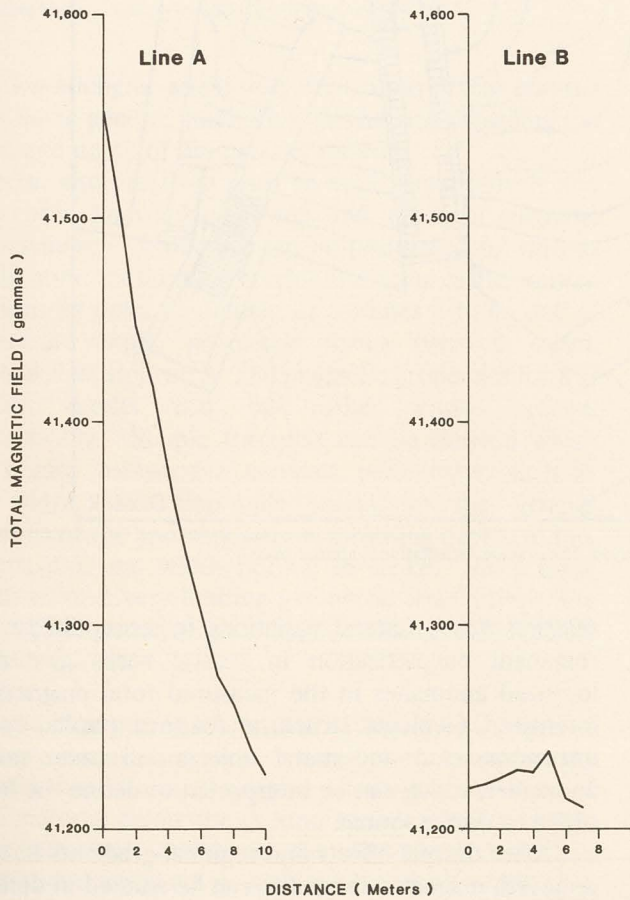


Fig. 6. Magnetic profiles in area of KV 5.

Oersted); the total field ranges from about 25,000 gammas near the equator to 70,000 gammas near the poles.

The earth's magnetic field is not completely stable. It undergoes long-term (secular) variations over centuries; small, daily (diurnal) variations (less than 1% of the total field magnitude); and transient fluctuations called magnetic storms resulting from solar flare phenomena.

The earth's ambient magnetic field is modified locally by both naturally-occurring and man-made magnetic materials. Iron or steel objects act as "local" dipoles, which are generally oriented differently than the earth's external magnetic field.

The iron or steel objects represent a local perturbation in the main earth field. The net field in the vicinity of the perturbation is simply the vector sum of the induced and earth fields. Thus, the induced field is a function of the "susceptibility" of the material, or its ability to act like a magnet.

Remanent magnetization is produced in materials which have been heated above the Curie point allowing magnetic minerals in the material to become aligned with the earth's field before cooling. The remanent field direction is not always parallel to the earth's present field, and can often be completely reversed. The remanent field combines vectorally with the ambient and induced field components. The contribution of the remanent components must be considered in magnetic interpretation.

Instrumentation: At present, the most widely used magnetometer is the "proton precession" type. This device utilizes the precession of spinning protons of the hydrogen atoms in a sample of fluid (kerosene, alcohol, or water) to measure total magnetic field intensity.

Protons spinning in an atomic nucleus behave like magnetic dipoles, which are aligned (polarized) in a uniform magnetic field. The protons initially aligned themselves parallel to the earth's field. A second, much stronger magnetic field is produced approximately perpendicular to the earth's field by introducing current through a coil of wire. The protons become temporarily aligned with this stronger secondary field. When this secondary field is removed, the protons tend to realign (precess) themselves parallel to the earth's field direction. The precessing protons will generate a small electric signal in the same coil used to polarize them with a frequency (about 2,000 Hz) proportional to the total magnetic field intensity but independent of the coil orientation. By measuring the signal frequency, the absolute value of the total earth field intensity can be obtained to a 1 gamma accuracy. The total magnetic field value measured by the proton precession magnetometer is the net vector sum of the ambient earth's field and any local induced and/or remanent perturbations.

A total field protonprecession magnetometer can be made portable and does not require orientation or leveling. There are a few limitations associated with the precession system. The precession signal can be severely degraded in the presence of large field gradients (greater than 200 gammas per foot) that are near 60-cycle AC

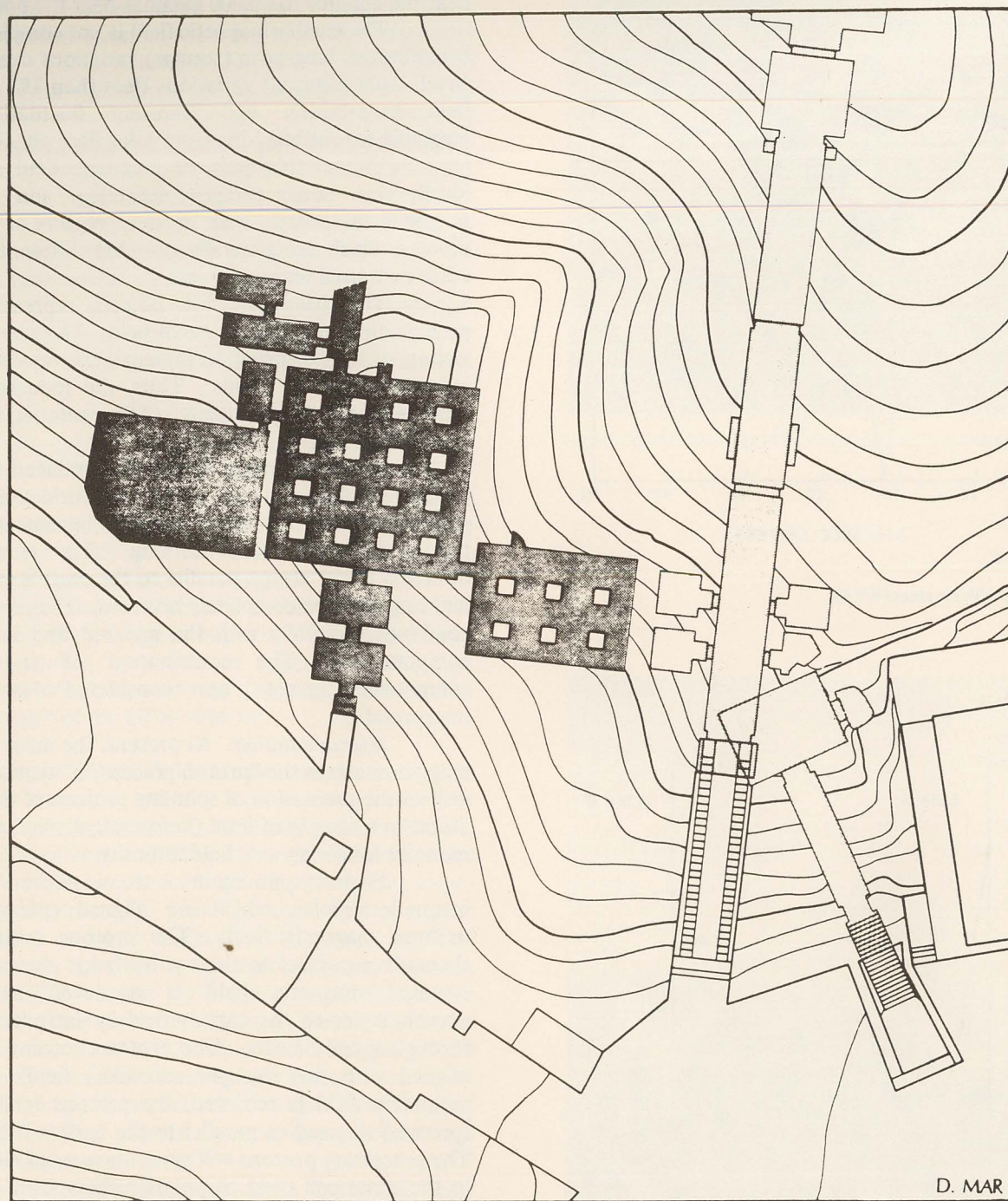


Fig. 7. Map of KV 5 and environs. Plan of KV 5 is based on sketch by Burton. Not to scale; orientation is approximate.

power lines. Also, the interpretation of total field data is sometimes more complicated than vertical field data which, however, is more time consuming to take.

Field Techniques. The field operator must avoid or note any sources of high magnetic gradients and alternating currents, such as power lines, buildings, and any large iron or steel objects. Readings are taken at a predetermined interval which depends on the nature of the survey, the accuracy required, and the gradients encountered. Base station readings, if required, are usually made several times a day to check for diurnal variations and magnetic storms.

Interpretation: Lateral variations in susceptibility and/or remanent magnetization in crustal rocks give rise to localized anomalies in the measured total magnetic field intensity. Geologic structural features (faults, contacts, intrusions, etc.) and metal objects will cause magnetic anomalies, which can be interpreted to define the location of the causative source.

After diurnal effects and regional gradients have been removed, magnetic anomalies can be studied in detail with derivative operation and frequency filtering employed to define depth and shape.

Because it is a potential field method, there are a number of possible source configurations for any given magnetic anomaly. There is also an inherent complexity in magnetic dipole behavior. If the various magnetic field parameters (inclination, declination, and susceptibility) are well defined, and some reasonable assumptions can be made regarding the nature of the source, an accurate source model can generally be derived.

Magnetic anomalies can be analyzed both qualitatively and quantitatively. The physical dimensions of an anomaly

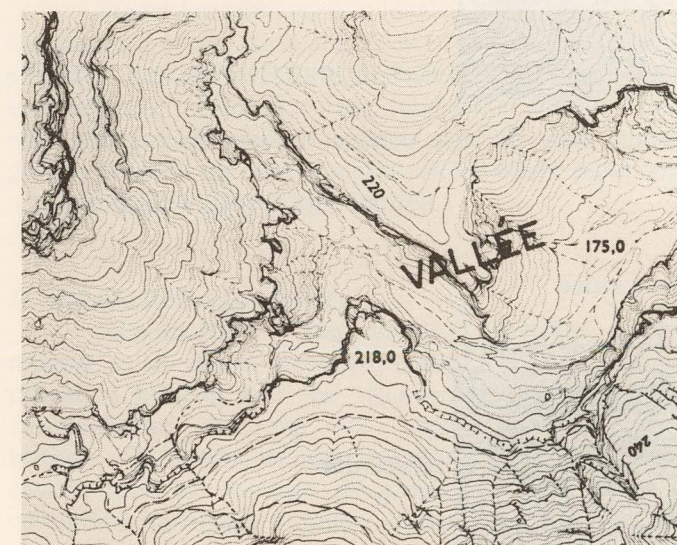


Fig. 8. West Valley, showing locations of GPR anomalies.

(slope, wave-length, amplitude, etc.) often reveal enough to draw some general qualitative conclusions regarding the location and depth of the causative source.

Precise interpretation must be done quantitatively and requires prior knowledge of earth and remanent magnetic field parameters. Modeling can be performed by various approximation methods, whereby one reduces the source to a system of poles or dipoles, or assumes it to be one of the several simple, geometric forms (vertical prism, horizontal slab, step, etc.) The magnetic properties for this simplified model can be rather easily defined mathematically. Simple formulas can be derived which relate readily measurable anomaly parameters, such as slope, width, and amplitude ratios, to the general dimensions of the anomaly source, including depth to top, thickness, dip, and width normal to strike. Since these methods involve very limiting geometric assumptions, the results can be treated as good approximations only for very simplified sources.

C. Ground Penetrating Radar (GPR) Survey Technique

Ground penetrating radar is an electromagnetic survey technique that reveals a graphic cross-sectional view of layered material below the ground surface. It is an echo-ranging technique similar to the single-trace reflection method commonly used in marine sub-bottom profiling in which reflective layers are traced by echo patterns generated in response to acoustic impulses. The two

techniques differ in that the acoustic method uses audio frequency sound waves transmitted through a water medium to the material under investigation. The radar method transmits, directly to the surface, impulses of radio waves at frequencies up to a thousand megahertz.

In a radar system (fig. 12), high-frequency impulses of radio energy are generated by the transmitter. A beam of these impulses is emitted by a special antenna placed in close proximity to the ground so that it couples electromagnetically to the surface material. Each impulse propagates downward through the ground surface and into the material below. At interfaces, part of the signal is reflected while part is transmitted still deeper to be reflected by other layers or isolated bodies. For each impulse transmitted a string of reflected impulses is returned to the antenna in a time sequence proportional to the round-trip travel time to each reflector. After transmitting the outgoing pulse, the system instantly switches from the transmitter to the receiver in order to detect the echo signals. When operated in the field during data acquisition, a graphic recorder provides an immediate view of the data. Data enhancement is possible if the data are recorded on a magnetic tape recorder for later playback at a slower speed.

Ground penetrating radar surveys are carried out by pulling the antenna slowly along a premeasured survey line. Radar impulses are transmitted in synchronism with a swept-stylus type graphic recorder. The graphic recorder stylus sweeps across the paper at a uniform speed and echo signals cause the paper to be darkened at points proportional to the total travel time to the reflector producing the echo. Because the antenna is being pulled forward, each pass of the stylus represents a slightly different antenna position. As the recorder paper is pulled under the moving stylus, a pattern of reflective interfaces is generated.

The recorder detects the presence of an echo whenever the signal level exceeds a preset threshold. The paper is darkened to coincide with every exceedance along any given sweep of the stylus. The pattern of darkened regions on the paper marks the reflective horizons in the earth. The distance shown on the recorder paper to any reflector is proportional to its depth below the path of the antenna.

Accurate determination of the depth to any layer requires calibration of the radar system.

The depth to an identified reflector such as a pipe, barrel, or a geologic feature, is the most direct and easiest method available for vertical scale calibration.

If the depth to an observed reflector is not known, a borehole can be drilled to establish its depth. This is a more costly procedure, but it provides an exact depth calibration at each drill location and also allows propagation velocity and a more precise dielectric constant to be determined.

Depth of penetration in a given material is limited by attenuation of the signal. Attenuation is a function of dielectric loss and of electrical conductivity loss which, in a given material, will vary with the amount of water,

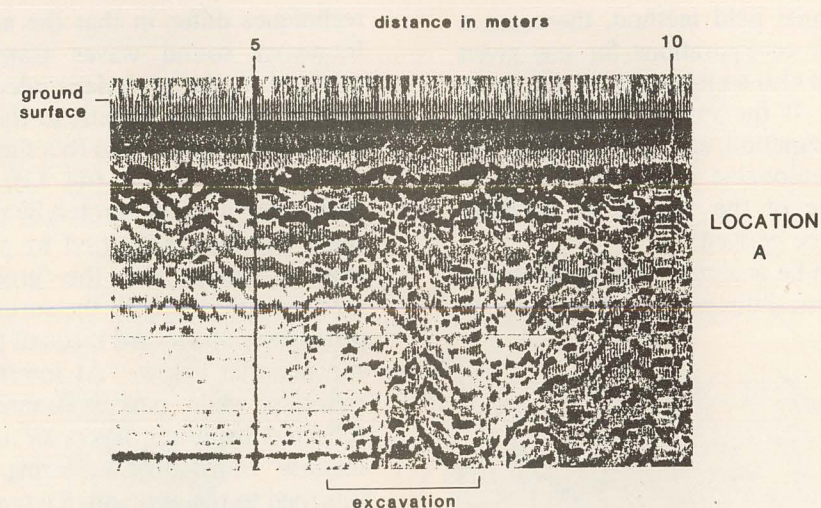


Fig. 9. GPR record, West Valley, location A.

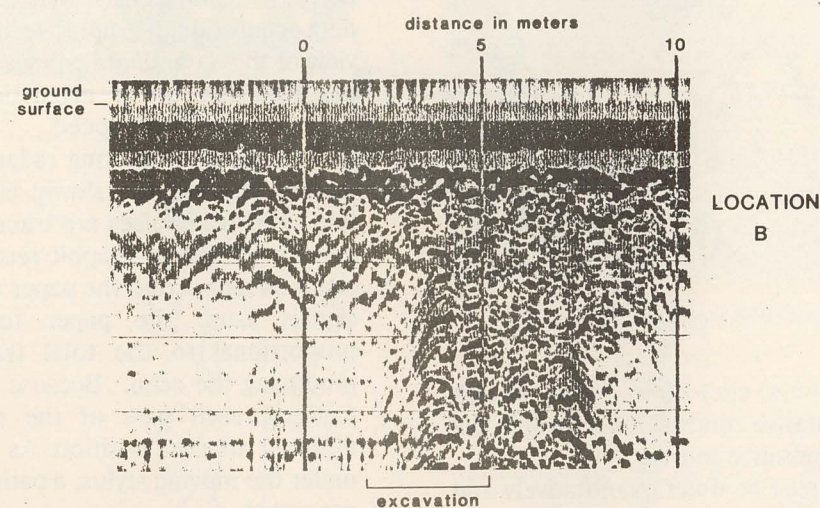


Fig. 10. GPR record, West Valley, location B.

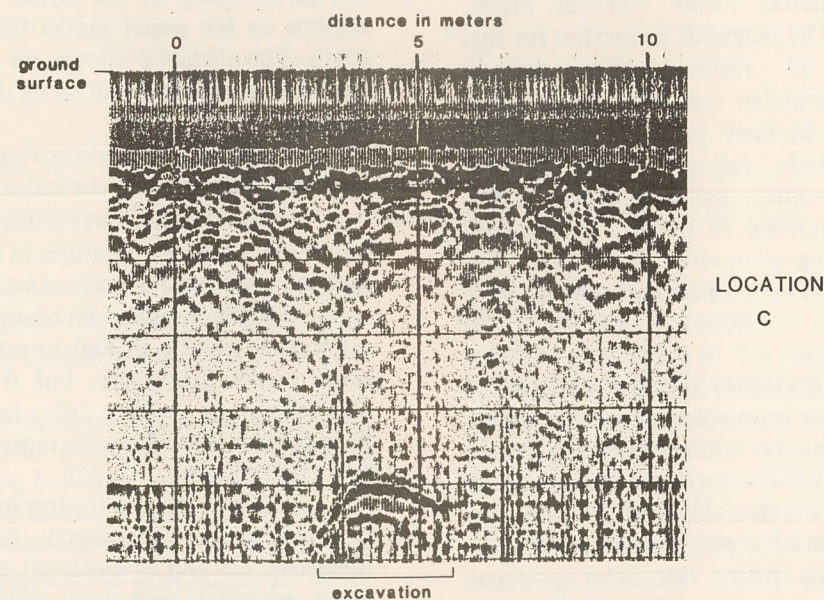


Fig. 11. GPR record, West Valley, location C.

dissolved salt, temperature, density, and frequency of the radar impulses. Penetration of up to 75 feet has been reported for water saturated sands in a Massachusetts glacial delta. The Antarctic ice shelf has been penetrated to 230 feet. Wet clays, however, will attenuate the signal within five feet, and sea water is transparent to less than one foot. It is important to note that in a layered material a single, highly reflective layer alone can limit penetration by preventing the propagation of energy past it. In this case, apparent loss of energy is caused by reflection rather than by dissipation.

Radar has been used to locate underground pipes, foundations, voids, sand, gravel, peat, and archaeological artifacts. Layered structures in soils and hard rock have been accurately charted in long continuous profiles. The ease with which modern systems can be used makes ground penetrating radar a logical choice where rapid and accurate shallow surveys are required.

D. Seismic Refraction Survey

Introduction. The seismic refraction survey method is a means of determining the depths to a refracting horizon and the thickness of major seismic discontinuities overlying the high-velocity refracting horizon. The seismic velocities measured by this technique can be used to calculate the mechanical properties of subsurface materials (moduli values), as well as for material identification and stratigraphic correlation.

Interpretations are made from travel curves showing the measurement of the time required for a compressional seismic wave to travel from the source ("shot") point to each of a group of vibration sensitive devices (seismometers or geophones). The geophones are located at known intervals along the ground surface. Various seismic sources maybe used, including a drop weight, an air gun, and small explosive charges.

Field Procedure. Weston Geophysical Corp. uses a seismic recording technique of continuous profiling and overlapping spreads for engineering and ground water investigations. The seismic refraction equipment consists of a Weston Geophysical trace amplifier, model USA780, with either a WesComp (a field computer system developed by the Weston Geophysical) or a recording oscillograph.

Continuous profiling is accomplished by having the end shot-point of one spread coincident with the end or intermediate position shot-point of the succeeding spread. The spread length used in a refraction survey is determined by the required depth of penetration to the refracting horizon. It is generally possible to obtain adequate penetration when the depth to the refracting horizon is approximately one-third to one-quarter of the spread length.

In general, "shots" are located at each end and at the center of a seismic spread. The configuration of the geophone array and the shot point positions are dependent upon the objectives of the seismic survey.

As mentioned above, the seismic energy can be generated by one or more of several sources.

The seismometer or geophone is in direct contact with the earth and converts the earth motion resulting from the shot energy into electric signals; a moving coil electromagnetic geophone is generally used. This type of detector consists of a magnet permanently attached to a spiked base which can be rigidly fixed to the earth's surface. Suspended within the magnet is a coil-wrapped mass. Relative motion between the magnet and coil produces an electric current, with a voltage proportional to the particle velocity of the ground motion.

The electric current is carried by cable to the recording device which provides simultaneous monitoring of each of the individual geophones. The operator can amplify and filter the seismic signals to minimize background interference. For each shot the seismic signals detected by a series of geophones are recorded on either photographic paper or magnetic tape, depending on job requirements. Included on each shot record is a "time break" representing the instant at which the shot was detonated.

Interpretation Theory: The elastic wave measured in the seismic refraction method, the "P" or compressional wave, is the first arrival of energy from the source at the detector. This elastic wave travels from the energy source in a path causing adjacent solid particles to oscillate in the direction of wave propagation. Imagine a hypothetical subsurface consisting of a lower velocity material above a higher velocity material. At smaller distances between source and detector the first arriving waves will be direct waves that travel near the ground surface through the lower velocity material. At greater distance, the first arrival at the detector will be a refracted wave that has taken an indirect path through the two layers. The refracted wave will arrive before the direct wave at a greater distance along the spread because the time gained in travel through the higher-speed material compensates for the longer path. Depth computations are based on the ratio of the layer velocities and the horizontal distance from the energy source to the point at which the refracted wave overtakes the direct wave.

Generally, the interpretation is by one or more of several methods: ray-tracing, wave front methods, delay times, critical distances, etc. (see W. M. Telford, et al, *Applied Geophysics*, Cambridge, 1976). In addition, either a forward or inverse interpretation can be performed using Weston's computer. Since successful refraction interpretation is based on experience, all interpretation of refraction data is performed or thoroughly reviewed by a senior staff geophysicist.

TOMB KV 48

As the geophysical report indicates, our first test of the magnetometer's data was made on the low hillside south of the path leading to the tomb of Amenhotep II (KV 35). This tomb had been found and entered in early 1906 by Edward Ayrton as part of Theodore Davis's

project in the Valley of the Kings. The tomb had been reburied shortly thereafter, its shaft filled with rubble, and the hillside overlaid with up to two meters of debris. The magnetometer precisely located this shaft, and it required only a few hours of digging to reveal its four corners. We cleared only about a meter of the shaft, there being little purpose in reopening the empty chamber below, and constructed a small stone wall on its uphill side to prevent rock slides from burying it again. The tomb shaft, we know from the excavator's report, was about 20 feet deep and opened into a chamber roughly 10 by 17 feet with a six-foot high ceiling. Inside, the mummy of a man, coffin fragments, a clay seal, several mud tablets, and a number of painted ushabtis were found. Inscriptions indicated that the tomb belonged to Amenemopet, vizier under Amenhotep II and governor of the town, a brother of Sennefer and the owner also of Theban tomb 29¹. The BMTP grid coordinates of the northwest corner of the entrance are: N 99502.6, E 94007.6.

TOMB KV 5

During the reign of Ramesses III, perhaps a half-century after the death of Ramesses II, several workmen at Thebes were arrested and charged with robbing tombs in the Valley of the Kings. We have a record of their interrogation on a papyrus now in the Turin Museum²: Now, Usihe and Patwere have stripped stones from above the tomb of Osiris King (Ramesses II), the great god... The chief artisan Peneb, my father, caused men to take off stones therefrom. (He has done) exactly the same. And Kenena the son of Ruta did it in this same manner above the tomb of the royal children of King Osiris (Ramesses II), the great god. Let me see what you will do to them, or I will make complaint to Pharaoh my lord and likewise to the vizier my superior.

Because of the context in which these statements occur, many Egyptologists believe that the reference to a tomb carved for children of Ramesses II must refer to one that lay quite close to the tomb of their father. His tomb, KV 7, lies immediately to the right of the entrance of the Valley of the Kings. The only tomb in the immediate vicinity of KV 7 to which the statement might refer is one, numbered KV 5, that lies about 40 meters to the northeast, dug into a rocky slope immediately east of the modern parking area at the entrance to the Valley.

KV 5 has been known for quite a long time. There is no evidence that it was visited by Greek or Roman or early Christian travelers in the Valley, but its entrance was seen by the French about 1799 and by several nineteenth century writers, most notably Burton, Lane, and Wilkinson, who commented on it. Lane described the entrance³:

Situated quite at the base of the hill and entrance concealed by the rubbish taken out. Entrance narrow. Passage has been quite filled up by rubbish washed in by rains and by frag. of stone which (has?) fallen in consequence of the damp on such occasions; but a way has

been cut thro this mass, leaving part all along to support the loosened masses of rock above. Impossible to trace any plan or order.

It was Burton who first described its interior and who left the only plan yet made of its initial chambers⁴:

This tomb is all in a state of ruin. On the ceiling alone which has in general fallen in vast masses are to be seen some small remains here and there of colouring -- The substance of the rock between the small chambers and the large ones above cannot be more than 18 inches. Being full of mud and earth the descent from the pillared room to those underneath is not perceptible. The Catacomb must have been excavated very low in the valley or the valley much raised by the accumulation of earth stones and rubbish brought down by the rains. I found a large piece

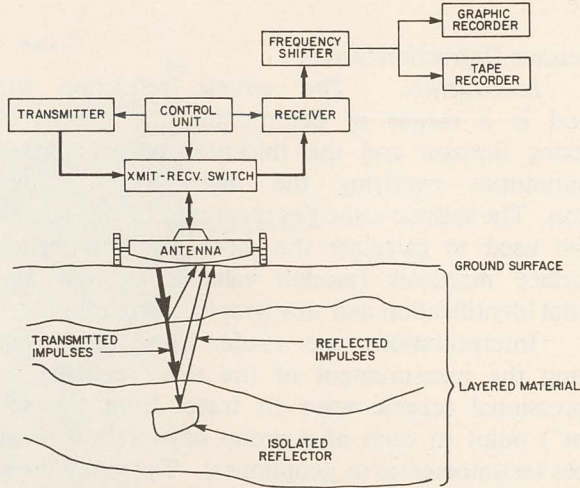


Fig. 12. Radar system block diagram.



Fig. 13. Map of the Valley of the Kings, ca. 1942, by Frederick Arundale, showing location of KV 5 (arrow). The tomb plan is in error. (From Romer, Valley of the Kings, p 113).

of the breccia verd'antico, evidence of those quarries having been used in this king's time and of some sarcophagus having been in the tomb of this material. It is possible there is some passage leading from below the center of the pillared chamber into that where the sarcophagus stood.

Burton's plan shows what may be two pits in the corner of the large pillared hall; it is possible, however, as Elizabeth Thomas suggests, that they are intrusive features. This plan, for which no scale has been found, is the basis for the accompanying plan of KV 5⁵.

As the geophysicist's report shows, magnetometer surveys of the slope in which KV 5 was known to exist did help to localize its position. But numerous maps of the area, made during the past century and a half, also show the tomb in at least the right general area, and, although there was no actual evidence for positioning the tomb, vague knowledge of "its position was perhaps never lost"⁶. Our equipment apparently indicated one of the major tomb chambers rather than the tomb entrance during initial passes over the slope, and it was subsequent magnetometer data plus a review of the historical records that caused us to move our excavations farther along the slope, closer to the Valley entrance, in our search for the doorway. When we did uncover the narrow pit in which a staircase and tomb entrance had been cut, we found that both asphalt paving of the parking area and a sewer line from the KV resthouse had inadvertently been laid over it about twenty-five years ago.

When we removed a portion of the debris blocking the door, we were met by a great rush of very hot, moist air, in part the result of leaks in the sewer pipe. The dampness has resulted in a significant deterioration of the wall surfaces where they were visible in the space between the dense debris and the ceiling of the entrance corridor. Slithering through this narrow space, we were able to reach the great sixteen-pillared room shown by Burton on his plan and to confirm some details of its design. So much stone has fallen from the ceiling, however, and so small was the crawl space between debris and ceiling that it was impossible for us to make a detailed plan without better light and equipment. The air inside was so bad that we were able to stay in the tomb only a few minutes before we had to crawl back to the entrance. When we left the tomb, we blocked the doorway with stones, not sand, and presumably the air will have improved when we re-enter it later this year to make plans and sections of its chambers.

If KV 5 is, in fact, the tomb referred to in the Turin Strike Papyrus, then it must belong to children of Ramesses II. Several other things also argue for that attribution. First, the location of the tomb, near the tombs of several Ramesside rulers, and at the base of a sloping hillside, would argue for a Ramesside date. Second, in spite of the unique plan of this tomb -- a very large pillared hall near its entrance and three doorways leading from that hall to other "wings" are features shown on Burton's plan that were confirmed by us in the tomb -- it shares more elements in common with Ramesside tombs than with royal tombs of other periods. And third, Burton

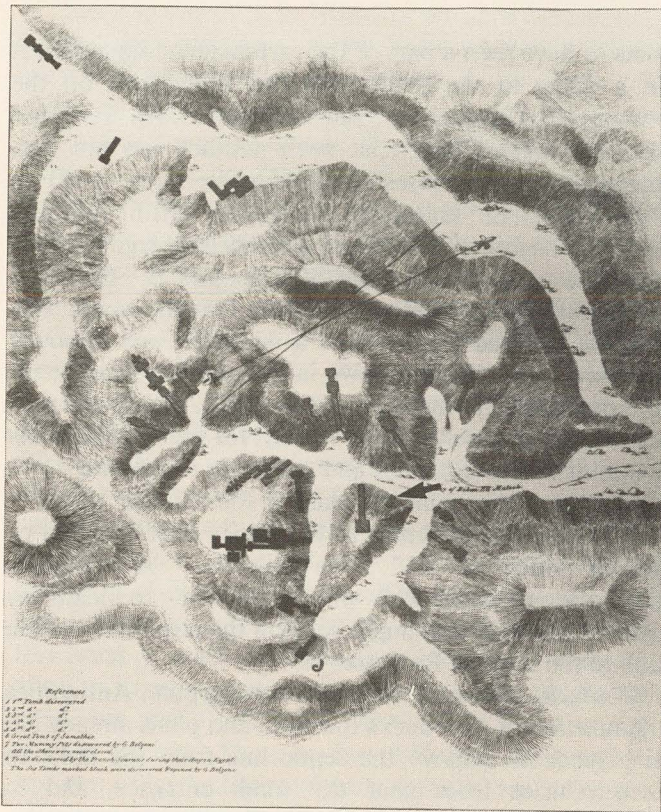


Fig. 14. Map of the Valley of the Kings, ca. 1817, by Giovanni Belzoni, showing entrance of KV5 (arrow). (From Clayton, The Rediscovery of Ancient Egypt, London, 1982, p. 127.)

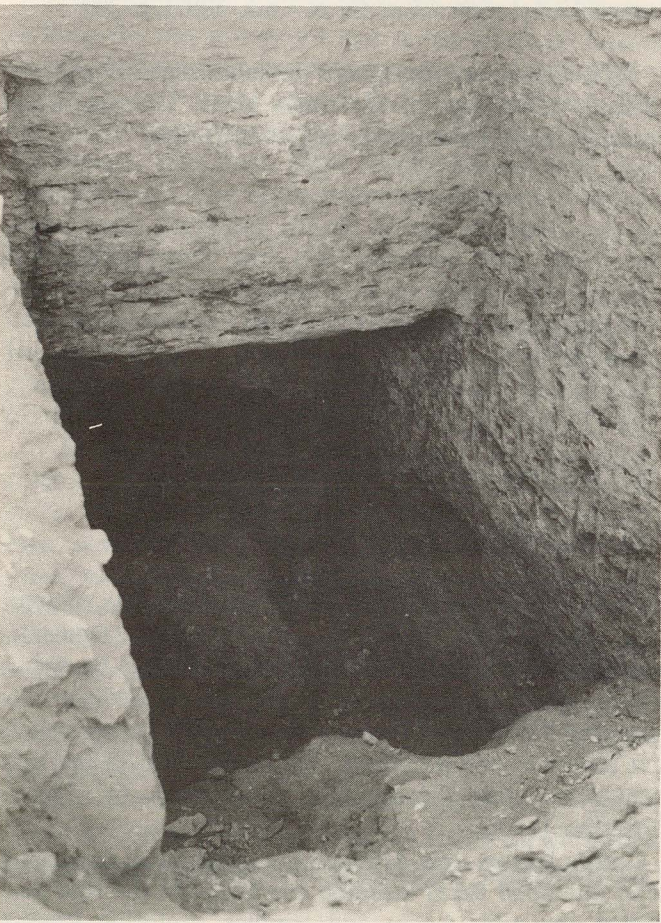


Fig. 15. Entrance to KV 5.

claims to have seen a part of the cartouche of Ramesses II "on a stone in the inside and the other part on the doorway...." Lepsius, too, saw the name: "An der Thre aber, am linken Pfosten ist noch deutlich das mit Salz bezogene Schild Ramses II (User-ma-re setep-en-re) zu sehen vor einer knieenden geflgelten Gttin [perhaps Ma'at]"⁷. Together, these form a compelling argument for dating the tomb to the reign of Ramesses II. Elizabeth Thomas has shown that it is unlikely that the tomb, with offshoots in three directions at a minimum and removed only a few meters from his own in a similar site, was meant for more than one member of his family. His numerous sons suggest themselves most readily, for vague indications may point in this direction and provision for several wives and daughters was definitely made in the Queens' Valley⁸.

It is our hope to return to the Valley later this year to plan as much of KV 5 as possible. A thorough examination of visible walls will also be made to locate any inscribed material that might confirm the attribution of the tomb to the reign of Ramesses II.

We have, of course, informed the Egyptian Antiquities Organization of the tomb's location, and plans already are being made to remove the septic line from the area, to block vehicles from near the tomb entrance, and to relocate the several sales kiosks that lie adjacent to it.

Notes

1. Porter-Moss, I, 2, 565 and 559; Ayrton, in Theodore Davis, *The Tomb of Siptah* (London, 1908), p. 18; John Romer, *Valley of the Kings* (New York, 1981), p. 209.

2. A.H. Gardiner, *Ramesside Administrative Documents* (Oxford, 1948), pp. 57-58; trans. in E. Thomas, *Royal Necropoleis of Thebes* (Princeton, 1966), p. 266.

A HOLY WILDERNESS

MODERN TRAVELOG

On Trekking in the Sinai by Camel

PAUL COOK

Editor's note: From 1980 to 1986 Paul Cook was director of marketing in Egypt for the General Dynamics International Corporation. During that time he was a member of the organizing committee which established the American Chamber of Commerce in Egypt and became its first executive vice president. He also served on the New York-Cairo sister committee established by Cairo's Governor Taleb.

Cook's leisure time activities (in addition to the camel safari described here) included snorkeling in the Red Sea, visiting pharaonic tombs and temples, exploring Roman

3. His notebooks are quoted in E. Thomas, p. 150.

4. Quoted in Thomas, *ibid*.

5. The map appear in Thomas, fig. 14, and is redrawn, without the pits, in Romer, p. 105. Romer's scale, based upon "average" pillar sizes in Ramesside KV tombs, is perhaps slightly too large.

6. Thomas, p. 149.

7. Lepsius, *LD*, text III, 197, quoted in Thomas, p. 150. The quote from Burton is on p. 149. The last to see the entrance were perhaps Carter and Davis in 1902. Romer, p. 183.

8. Thomas, p. 150.

IN MEMORIAM

It is with deep sadness that we record here the death of Miss Elizabeth Thomas, whose *Royal Necropoleis of Thebes* has been, since its publication in 1966, the standard reference work on the royal tombs on the West Bank. Miss Thomas was a major contributor to our work, freely offering advice, suggestions, and comments since the inception of the BTMP in 1978. Prior to her death, Miss Thomas agreed to permit the publication of a second edition of her classic work, substantially revised by her in the last years of her life, as a part of the Berkeley Theban Atlas. A two-volume edition of *RN* will appear as a companion to our KV Atlas. It will be produced under the supervision of Ms Catharine Roehrig, BTMP's Assistant Director, who worked closely with Miss Thomas in its revision.

ruins, and searching for geodes and petrified wood. He was a loyal and general supporter of A R C E.

Had professional demands not required a move to Germany where he is now European deputy for RAM and RAM Launch Systems, Paul Cook claims he "would have stayed indefinitely in Egypt."

In a Sinai mountain pass several kilometers west of Nuweiba, the soft trodding of hooves broke the silence at a thousand meters above the Gulf of Aqaba, barren of plants except for an occasional acacia tree. The high desert mountains became nonetheless more and more beautiful as a score of colors emerged from the sands and eroding rock formations. Their ruggedness, reaching higher and higher towards the sky, was a sign to be cautious, yet the

silence and purity of the landscape beckoned us to further penetrate this holy wilderness set within the shadows of Moses Mountain (Mount Sinai). There was an occasional bedouin, coming seemingly from nowhere and going seemingly nowhere. Each of us who had gathered in the spirit of camaraderie and adventure to make this trek into the Sinai on camelback was deep in his own thoughts. Here in the arid wilderness there was time and serenity to ponder and to wonder as we lurched gently forward and backward with each camel step.

My own thoughts wandered back to the mid 1930s when I was a youngster living in the small fishing village of Montauk, New York, near the sea and close to nature. Without so much realizing it then, we coped with many hardships which made dealing with life much easier in later years. I did not know at the time what might be a better or worse existence. We did what we had to do to live and, at times, to survive. The catch of the fishermen determined how much there would be to eat. The cutting and chopping wood from fallen trees kept us warm in the bone chilling winters at the tip of Long Island. Sometimes on Sundays our family of nine walked over a mile through the snow to church to give thanks for what God had allowed us. Lurching along on a camel now, I remembered the tidal wave of the devastating 1938 hurricane which carried our house and those of neighbors from their foundations in a disarray not to be imagined. Our lives were spared -- to experience heartaches and happiness, disappointments and pleasures in the years to follow. These thoughts were some that went through my mind as we continued in the heat of the Sinai's September sun.

Our camel safari started with arrangements made in July 1985. Our good friends Colonel Eberhard Moschel, West German Defense attache in Egypt, his wife Sigrid, Eberhard's brother Rudolf, a dentist practicing in Oberstaufen, Germany, and my wife Christa and I agreed to rendezvous with our bedouin guides Rima and Anis on the evening of September 15 in Nuweiba on the east coast of Sinai. It had been determined that our bedouin guides would build fires for cooking three times a day and that they would make bread twice a day. We would have to bring food, clothing, sleeping bags, and some water for five days. The amount each of us carried would have to fit into a camel saddlebag which amounts to a pocket on each side of the camel about the size of a standard sofa cushion. A few smaller satchels could hang from the pommels of the saddle. We had talked several times about what to bring, but we had to use a lot of imagination as none of us had ever been on a camel nor ventured into remote desert mountains on a camping trip.

In the early morning of September 15 we left Cairo in two autos, drove through the Suez tunnel and along the Sinai southwest coast nearly to the southern tip, then up to St. Catherine's monastery and over the mountains to the coast of Nuweiba, arriving in the late afternoon. We had stopped twice for snacks and gasoline in order to top up the tanks. One never knows whether the next gas station may have run out of its supply.

Since it was dusk in Nuweiba we went immediately to locate Rima and Anis, as we knew we would have had great difficulty finding their place in the dark. They appeared pleased to see we had arrived, and the first order of business was to sit around the fire in front of their small house and have hot "chai" (tea). Without relatively clean clothes we hesitated to sit on the ground and muttered something about needing to check into the hotel to get a good night's sleep. Nevertheless, we soon found ourselves sitting cross-legged on the ground sipping tea. Thirty minutes later Rima announced that we should go to the hotel in the village (about three kilometers away) because the village police had to record visiting foreigners before we would be allowed to go into the mountains the next morning. Rima and Anis would be held responsible for us and the police would want to know where we were in case any problems arose. Rudolf, a bit more adventurous than the rest of us at the outset, slept in the bedouin's hut at the invitation of Rima and Anis. The Moschels and Christa and I spent the night in the Nuweiba Hotel. The site of this hotel is really beautiful, but little care seems to be given to its maintenance or operation. Still, we did have a good rest and a cold water shower and arose at 4:30 to meet at the hut. There we found Rudolf, Anis, and Rima and two other bedouins already drinking tea and pinching off pieces of freshly made baladi bread. We had naturally expected to see several camels standing there in readiness. This was not the case, though -- a portent of things to come and our first lesson in "take it easy," "there's time," "have your tea first."

It was after eight o'clock when the camels finally strode in from the tiny settlement just to the north of Anis and Rima's homestead. While I wondered just how all the items that we brought were to be carried on these animals, the third bedouin, Ahmed, commenced to stuff the saddlebags with our many small canvas and plastic shoulder bags. Two of these shoulder bags each contained about eight liter-sized plastic bottles of water and they were slung over the rear pommel after the loaded saddlebag had been draped over my camel. The two duffle bags containing the sleeping bags which Christa and I had borrowed hung from the forward pommel of the saddle. Altogether it appeared as though there was no place at all left for one to sit and ride atop this bulging mass of freight.

In surprisingly short order we were being coaxd to climb upon the kneeling camels in order to get under way. Never having been on a camel, I tried to recall how I had seen someone in a movie swing himself into riding position. A camel is simply too high to just throw a leg over, particularly with all the baggage mounted. It turned out that it was easiest to mount from the camel's left side, and I would place my right knee on the top of the saddle and then with both hands firmly planted on the forward pommel, swing the left leg over the other side of the saddle and baggage.

When Ahmed prodded my camel with the toe of his shoe to get her up and moving, I quickly found myself lurching forward and backward. In no time all five camels, eight

persons, and two dogs were on their way heading from the village of Nuweiba towards the nearest wadi and a gradual climb up into the mountains to the west.

Eberhard, Rudy, Christa, and I rode our own camels; Sigrid and Rima rode together on the fifth camel, while Anis and Ahmed walked. It turned out that these two bedouin men went by foot each step of the way. The two dogs easily kept pace with the camels, and we observed that the shade beneath the camel provided relief for the dogs from the very hot sun.

The first wadi we entered was the site of new highway construction which would ultimately allowed auto traffic directly between Nuweiba and the tunnel under the Suez Canal, located just north of Port Suez. Hours will obviously be saved by avoiding the tedious drive from the tunnel into south Sinai, up through St. Catherine's to Nuweiba, but these barren and desolate yet very beautiful mountains and wadis will probably soon be decimated with abandoned vehicles, spent tires, oil cans, and carelessly discarded garbage. These thoughts were interrupted by the sudden lurching of my camel who seemed determined to short-cut the intended path of travel down an embankment formed by the buildup of crushed rock for the new highway. It had only been a few hours since we had started the camel trek, and I had not yet acquired a very secure feeling on this pitching and swaying mount. The camel's independence kept me alert and I began to experiment with the rein to prevent further unnecessary diversions. Exerting gentle but firm pressure with the rein seemed to work and I had no unusual problems in the days to follow. The entire first day was to be, in fact, one of experimentation to learn how to remain stable atop this desert animal, how to "steer" it, and how to make it sit and stand again.

While it soon became obvious that Anis got the camel to stand with a light toe kick or hit with a long slender cane stick, I was still trying to figure out how to make my camel sit. After learning in just one day that one's power of concentration becomes more intense in an environment devoid of the distractions of modern living, the answer came to me. I observed that Anis did not make any unusual movements at all with hands or feet when the camel went down, but that he made a slight gurgling sound from his throat. My first "gurgle" attempt proved successful and now feeling in control of this animal much of the apprehension of the ride immediately disappeared.

What didn't disappear quickly were the saddle sores I acquired the first day. To alleviate this problem I made bowline loops at each end of the hobbling rope for my camel, then placed it over the forward pommel to use as stirrups. The bedouins do not use any form of stirrup. Rather, they simply cross their legs and are able to go for many kilometers this way without difficulty.

During the first day's ride we stopped for lunch and rest during the high noon sun under a lone acacia tree, nearly barren of leaves, located in a small canyon off the wadi trail. The camels were set free to roam without their burden of freight and saddles, although their two front feet were hobbled so that only very short steps could be taken.

Nevertheless, after the two hours of our noon rest period they had all wandered about a kilometer into the wadi in search of meager pickings of a few dry plants or roots that were hardly visible to us. It took about thirty minutes during noon rests for Anis and Ahmed to round up our camels and another fifteen or twenty minutes for resaddling and repacking.

The first afternoon we passed an MFO camp (Multi National Force and Observers), manned by American forces. The MFO consists of armed forces of various countries participating in the safeguarding of peace in the Sinai. It is one result of the Camp David accords between Egypt and Israel. A few kilometers past this MFO camp we approached our first evening's campsite. It was in a very small oasis on a curve of the wadi where some underground waters allowed about twenty palm trees to flourish. While they afforded us no sort of protection or real usefulness, they were a pretty sight after not having seen anything green all day long. When we stopped I gave my best gurgling sound to lower my camel. Just as I was about to give myself kudos for accomplishment I realized that all the camels knew it was time to stop, so they automatically and promptly went down anyway. In just moments we unloaded them and carefully stacked the freight of each camel separately so as to make it easier to reload each one with the same items.

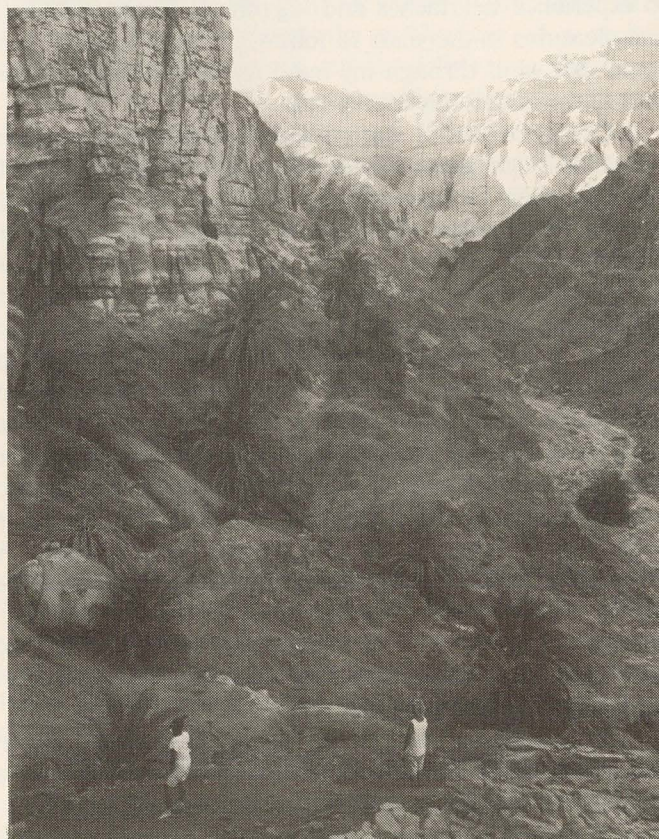


Fig. 16. On the fourth day, when the water was not available in the well except for small amounts and terrible odor, it was nonetheless potable and no one fell ill.

The camels were again hobbled and allowed to roam for about an hour or so without burden. Then they were led a short distance away from the campfire, perhaps about thirty meters, and made to sit where they would remain throughout the night. As they were brought down, a feedbag with several handfuls of corn kernels was placed over their heads. There they sat gracefully and happily feeding on their reward for a day's work.

While the camels roamed we had been busy deciding what to eat and determining where best to place our sleeping bags. During this time Rima went out, as she did at each campsite, to find wood to make a fire. Rudy would often go with her to help bring back any useful roots, twigs, or branches. In the meantime Anis and Ahmed, having walked the entire day, lay down to rest until Rima returned. The very first order of business was to build a fire to make tea. Then Ahmed commenced the kneading of flour and water to make bread and Rima and Anis brewed and served the tea. The prominent red, white and blue "hands over the sea" logo on the white flour sack clearly indicated that the flour was provided by the United States. I wondered just how many Americans realized the many places in the world where their agricultural produce was consumed.

All of us noticed that Ahmed had accomplished his chores in handling the camels, the dogs, and himself without ever having washed his hands -- and the dogs had earlier been drinking water out of the aluminum basin in which the bread was kneaded. Although all of us decided at that moment that we could never eat the bread, we were soon to change our minds. In fact, our tolerance levels were altered drastically as the hours and days passed.

The kneaded round but flattened bread dough was about one centimeter thick and thirty centimeters in diameter. As soon as the tea was made, the coals on the fire were spread enough to accommodate the bread dough which was placed directly over the hot coals. Then hot coals were placed atop the bread as well. After about thirty minutes, the bread was tapped with a stick for the proper sound. Sometimes it would go back on the coals for several more minutes -- and sometimes it was ready as indicated by the tapping sounds, understood by the trained ear of the bedouin. The blackness of the coals were scraped off and when finished the bread appeared quite like that purchased in Cairo bakery. We surmised that anything which would survive that hot fire would surely be safe to eat, and we did just that without any further reservations. In addition to the bread, our meal that first night consisted of canned soups and other canned foods requiring only heating.

Although we worried that we would perhaps not have enough supplies of each sort, the amount of baggage and freight we carried was ten times more than that of the bedouins. The differences were clear at the end of the first day. The bedouins wore only a simple galabiya. In contrast, we carried various types and several changes of clothing, all of which we had imagined necessary. Also, the bedouins were simple in their food needs, carrying only flour, tomato paste, meat, onions, garlic, herbs, and oil.

Aside from a knife and a spoon they needed only three utensils, the aluminum basin such as those used years ago in my childhood for washing dishes, a kettle, and a two-liter pot. The basin was used for washing feet, feeding the dogs, kneading the bread dough, and for mixing their daily meal of bread pieces and a soup-like mixture. The kettle was for hot water or tea. The pot was for cooking the various sauces.

One of the sauces made by the bedouins is of tomato paste. I observed Anis making it several times. First he poured some vegetable oil to cover the bottom of the pot and sauteed garlic and onions with salt, pepper, and a few herbs. Then he added tomato paste and water and let it simmer. Finally he would sometimes open a small can of beef, purchased at a government store in Nuweiba, and add the meat after cutting it into small pieces. When finished, the bedouins would sit cross-legged around the pot and dip bread pieces into the sauce which they ate with their fingers. We were offered a place to sit with them to eat which we accepted from time to time, but most of what we ate was from the supplies we carried. We preferred more variety in our meals, and there would not have been enough for everyone to eat what the bedouins cooked. We learned that the bedouins would share any amount of food they might have, even if it meant that each would have only two or three bites. How many people in this world would be so sensitive and generous?

The first day was a sort of test as it would have been convenient to turn back at this point. Rima told us that foreigners frequently decided to go no further and she would have to take them back to Nuweiba. On this first camp night the wind started up, causing the sand to fly about, getting into our hair, food, clothes, and bedding. While it was all rather distasteful and discouraging, we felt we must stick it out for the five days. We had done so much talking and planning for the camel trip that we chose not to think about anything except continuing.

Although we had had visions in Cairo of a rather romantic setting under the stars around a camp fire, reality played havoc with the dream. By eight o'clock at night, we were all so tired that all anyone could manage to say was "good night" and zip up the sleeping back. Strangely enough, the thought of a scorpion or a snake was far from my mind. I suppose that I had subconsciously decided that Anis knew where he was going and what he was doing in this respect. At any rate, at this point of tiredness, I counted a few satellites streaking across the heavens, looked at the Milky Way and the Big Dipper, and fell fast asleep.

My first thought when we were awakened the next morning about 4:30 or 5:00 was to turn over -- but Ahmed was already working the fire and indicating that we would leave before long. I had remembered an old breakfast standby in the Boy Scouts and at home in Montauk, oatmeal with raisins, and I made this for all of us as it was substantial, quick, and easy. After coffee we ate some dried fruit and nuts. Then we mounted up and were on our way for our second day into the wadi, still climbing upwards.

After a two-hour ride we heard the barking of many dogs. Upon closer inspection we saw three or four acacia trees a few hundred meters up ahead to our left where some bedouins and their goats were taking meager shelter afforded by these trees from the growing heat of the mid morning sun. It seemed to us at first that this area would be the last place anyone, including bedouins, would think of staying. While we all certainly knew that fresh or potable water means life, we were to learn even more in the next few days of its value, and that we should not take it so much for granted in our own countries.

It became more interesting each day to realize that our bedouin friends seemed to know each of the other bedouins we met in places more remote than the last. Most of them apparently were of the same tribe.

Our noontime rest stop on the second day was in a very wide section of a wadi where the only shade was from the leafless branches of a lone acacia tree. We did not carry a thermometer but it was certainly no less than 40 degrees centigrade. Food was not very interesting under these conditions, but something to drink was attractive indeed. Rima managed to find enough twigs to make fire for the tea which was always made three times daily regardless of location, heat, or other circumstances. Each time it had the same wonderful flavor -- black tea leaves combined with some local herbs and the smoke from the fire.

Even though tea seemed to provide a cooling effect under the hot sub, each of us clamored for a drink of cool water. In trying to devise a method to provide that, I considered the basic principles of evaporation. I wrapped a wet towel around a liter-sized plastic bottle of water. Even with only the slightest breeze of very hot air, the water became very cool after forty-five minutes through the evaporation of moisture from the towel which transferred heat from the water in the bottle. Should you have enough water, there is another practical use of this evaporation system for cooling. By soaking a bandana or any similar cloth in water it can be draped either over the head or around the neck to generate a comfortable cool feeling even in the hottest sun. I recalled movie scenes of Foreign Legion troops wearing hats with cloth pieces hanging down to cover the backs of their necks. This is, as I experienced, practical and effective in such heat and not just a fashionable look for desert troops in films.

The campsite our second night was a relatively flat horseshoe-shaped area about 100 meters wide surrounded by mountains. This was the most welcomed site we used because a water well, developed by the bedouins, gave us access to plenty of potable, albeit brackish, water. But nothing comes free in life. This particular well was swarming with hundreds of wasps. With Rima away in search of wood and Ahmed busy with the chores around the animals, we sought Anis to inquire about the wasp problem at the well. Alas, he had disappeared. A short while later we noticed that he had climbed all the way to the top of the high point which was several hundred feet above us at a very steep angle. Even after walking all day in the hot sun, Anis had the energy and fortitude to make this very rapid ascent. He was just a speck as he moved to

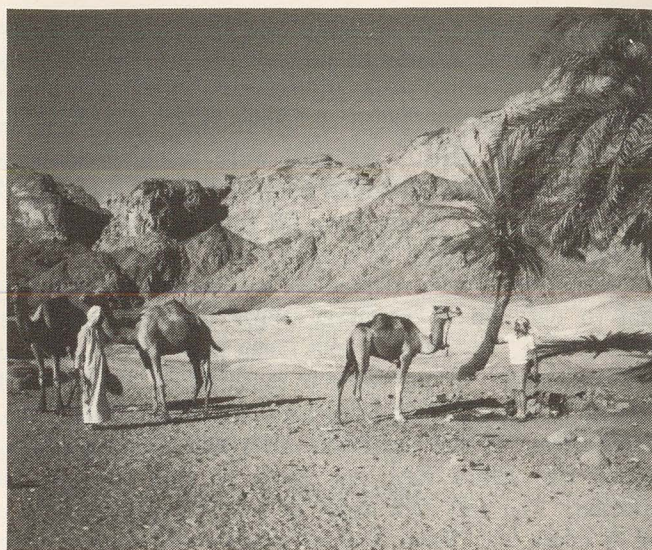


Fig. 17 Having to walk the camels through a difficult pass (Paul Cook in the foreground)

us below. As Rima and Rudy returned with the twigs and roots, we learned that Anis had climbed this peak because it was his favorite place for prayer while in this area of the mountains.

With a well at our disposal we were now thinking not only of potable water but using the well water for bathing. Had we been alone the wasps would easily have kept us a respectable distance away -- forever. Anis finally returned and was amused that we let such tiny creatures bother us, but I still had memories of a series wasp sting from my childhood. Anis told us that these wasps would not sting if we moved very slowly. He proved his point while getting several buckets of water from the well. So each of us cautiously entered the swarming area of the well and managed to get out precious water, unstung.

Once again it had been a long day and as soon as we arranged our gear, cooked something to eat, and sat for a short while drinking tea, we were all ready for the sleeping bags. The skies were very beautiful each night. Every star in the heavens seemed to be at our finger tips. I again fell asleep looking at the Big Dipper and checking the location of the North Star.

The next morning we went over the ridge to a canyon leading to the slope which would allow us to climb the same place where Anis had gone to pray the evening below. At the pace we went it took about an hour to get to the top, but we stopped now and then to take in the sheer beauty of nature all around us. The sandstone was in all colors -- deep violet, yellow, red, green, white, brown, pink, and blue. After we reached the peak I chose to stay on the ridge to examine the various rocks for their colors while the others continued further into a canyon on the other side. During the hour alone on this ridge I found about thirty exquisite rocks. I lined them up to my own satisfaction and for the others to see upon their return. Also, because they were easy to crush, I decided to experiment with the sand from these various colored rocks. I mixed a bit of water with each of the several colors. With these I made a design on a clean flat rock just to see if in

fact one could paint with them as I was curious whether this was one method used in ancient times. The wet mixtures dried quickly in the hot sun and the beautiful hues were prominent on the "rock canvas."

Eberhard and I recently visited with Rima and Anis in Nuweiba. During our talks, Anis told me that my "museum of rocks" and the painting was still there after nine months.

While returning to the campsite we were fortunate to observe falcons in action against small animals and birds atop some ledge on the side of the mountains. The falcons would fly quite high, then fold their wings inward, dive downward like a falling rock, and at the precise moment necessary unfold their wings to brake themselves to grasp the smaller birds or ground rodents. Also on the return Anis showed us a "date cooperative" shared by the bedouins in the area. It consisted of a roofless rock shelter of four walls in which they dried and stored dates after harvesting them from various remote locations.

It was noon when we returned to camp and we were hot, sweaty, and thirsty. Our first approach was to the well where we slowly and carefully made our motions so as not to disturb the wasps as we drew the buckets of water. The bucket was a rusty one-gallon can which was tied to a line consisting of four or five pieces of string that someone had acquired with great difficulty as there is no trash or waste anywhere along our route. The bucket and line were always left at the well and it was understood that no one should remove them.

Because we were without privacy near the well, bathing was a delicate but manageable affair among the mix of discreet individuals in the group. We all felt quite good again with clean clothes and the sand from the first day's sandstorm washed out of our hair. But aside from getting clean, as the sun rose higher we were again melting from the heat. The best relief at this camp was to ask one of the others in the group to simply pour a bucket of water over the head. This was a super feeling but it lasted only only thirty minutes at the most.

We were told that there would be one more well on the fourth night of camping, so there was at least something to look forward to with respect to getting another "shower." We were content then to fill all our water containers to last two days. Eberhard and Sigrid had an ice chest which had been loaded with bottles of frozen water. These were protected inside the ice chest and they actually had cool water for limited drinking purposes during the first three days. After this point we were limited to the brackish water from the wasp well which, when added to the Lipton iced tea and lemon mixture, was like a champagne!

As we had done the previous days when the sun had passed its zenith, we started out again to ride most of the afternoon. On this day in particular the route we took was so rocky with such steep rises and falls that we had to dismount and lead our camels much of the time. While doing so, the proximity of the camel's head to our own was at first a bit frightening since we had heard many tales of camels biting people as well as other camels. As the minutes passed into hours and not one of us had been at

all bothered with such a problem, we gained more and more confidence. We were by no means expert with these animals, but we were beginning to at least get familiar enough so as not to be paranoid about their actions, reactions, or sounds. For example, one of the loud, sometimes rather ferocious, gurgling sounds the camel makes is usually a sign that it is uncomfortable because of the wooden saddle frame digging into its back. When this occurred it was necessary to completely unload that camel, readjust the saddle, and place burlap underneath the saddle at the point of irritation before repacking everything again. When the camels were happy and comfortable they normally did not utter any sounds.

We had several times discussed among ourselves just how well suited the camel was to the desert. God surely designed the camel for such a dry, barren and rough environment. And I believe we all agreed that the face of the camel has a serene and royal appearance, irrespective of those moments of fit when it fills the air with gurgles of displeasure. We also observed that the sure-footedness of the camel while walking the rocky trail was most interesting, and that it seemed an exceptional feat (no pun intended). In all the hours I watched the feet of the camel in front of me I never saw a miss-step. Always each foot would come down ever so gently and precisely between the rocks -- almost never on top of the rocks where it might slide off. After a long time I determined how this was possible, realizing that if I want to be sure where I am stepping, I naturally look down at my feet. So I looked at the camel's eyes. Those eyes, already extended on a long neck, bulge out top the left and right side of its head. It is quite clear that they are so positioned as to have a line of sight to all four feet.

On our third evening I made special observation of the camels after dark. From the camp fire location I shined my flashlight on each of them. They were situated about twenty meters away and were encircling us. I thought it strange that each of them, was headed in the same direction. I watched as they ate their corn. As they came to the end of their supply, and only two or three kernels were left in the feedbag over their heads, they would turn over on their backs, kicking their feet wildly in a desperate attempt to get to the very last kernel. After this bit of excitement they would get back in kneeling position and eventually lay their long necks flat on the ground and go to sleep.

Another interesting observation on the camel is that they knew exactly where the corn was kept in the burlap feedbag. Several times while we were busy setting up camp we would have to watch the camels closely so that they would not get to the corn supply and completely consume all their food at once. They took little or no water most of the five-day trip but had their corn ration each evening before sleeping.

On the morning of the fourth day after having ridden for only a short distance, we came to a place through which the camels could not pass. At this point Ahmed and Anis led all five camels around the area and we were to rendezvous with them two hours later. Then Rima and

one of the dogs which had decided on his own to follow us led us up and down ridges and gullies whose surface consisted mostly of sliding rocks. This brought us to an incredibly deep cut, a sort of canyon about two meters wide and rock walls going almost straight up to about one hundred meters. It was like walking down a narrow hall with a sand floor and extremely high walls.

Entering this narrow canyon required a bit of care, as one had to go through the hole in the rock formation and sort of slide down a steep slope a few meters to the sand floor below. As each of us gradually made our way to the bottom and commenced to proceed through this amazing cut, we realized that the dog remained above, too frightened to drop through the hole. He began to whine and nervously pace back and forth to gain all the sympathy he could muster. Finally success came, thanks to Christa's urging and Rudy's efforts. We supported Rudy's footing to get him as high up as possible on the slanted chute beneath the hole. Then using Rudy's body as an intermediate step the dig made his leap to freedom. We were all much relieved to be able to proceed through this beautiful natural sculpture formed many thousands of years ago. Considering the small population of the Sinai, I suspect that only a very few bedouin even know this canyon exists. We made our way through it because Anis had discovered it and had guessed his visiting friends would find it fascinating. We did, and it is unforgettable.

We stopped midway in this passage to rest in a spot of shade provide by a bend in the "walls." Since it was near noon, the sun was pretty much overhead and shade was difficult to find anywhere. In addition to the enjoyment brought on by the now inevitable sip of "wasp water," Rudy and I had a few extra moments of serenity with a new pipeful of tobacco. As I puffed my Captain Black, I reflected that this place must be one of the most remote, quiet, serene, and safe in the whole world. In recollection, it was certainly one of the most vivid moments of this trip into the mountains of the Sinai.

Having immensely enjoyed the venture through the passage, we emerged eventually into a wide wadi which looked much like the moon's surface. We had an hour's walk, still under a very hot sun. As we approached any vertical rock formation we stood in whatever spots of shade they might afford. These were more psychologically cooler than they actually were. When the sun is high in desert mountains, there is really no escape from the direct rays and the heat. Only during the early morning or late afternoon can one realize a good shady location, provided it is near the base of a rock or mountain formation. On the other hand, in mid September we found that during the evening hours it was necessary to use a light sleeping bag as the temperature drop is considerable --and it is very comfortable for sleeping.

The noon camp this day was hot like the others, and nothing special can be said except that we wished the high sun would pass quickly to a lower angle in the sky. The dried fruit and nuts became more welcomed along with whatever we could drink. It was too much of a chore to cook any food at noontime.

All afternoon we continued to plod onward to the now long-awaited evening campsite where we anticipated the next well. Few words were spoken along the trail, as we would have had to shout in order to be heard. At times there was no desire to talk because of the heat or simply because we chose to be quiet and at peace.

However, since Rima and Sigrid were mounted on the same camel, they spoke to each other much of the way. Rima speaks Arabic, English, and German, the latter because she is Swiss. Rima came to the Sinai on a visit several years ago, during the occupation of the Sinai by the Israelis. She liked it very much, and when the Sinai reverted to the Egyptians, all non-bedouin and non-Egyptians had to leave the peninsula. Rima and Anis (who speaks English as well as Arabic) found each other, fell in love, and married, so Rima stayed. She became a bedouin and participates in every part of bedouin life in Nuweiba. There, a few hundred meters from the shores of the Gulf of Aqaba, she and Anis grow a variety of vegetables, cultivate fruit trees, and tend goats and chickens. Rima has almost single-handedly built up a small business, selling handmade bedouin jewelry, animal trappings, dresses, and the like. The business also arranges and conducts camel safaris. Arrangements for such trips can be made only by driving to their place in Nuweiba. They have no phone, and postal service is, for all practical purposes, nonexistent.

Finally we came to our campsite where we anticipated a "bath." After provisionally setting up camp, Rima told us



Fig. 18. At the "wasp" well camp area: Anis and Dr. Möschel

to get our soap, towels, and water containers. She said it was a little way over the top of the mountain, in which direction she pointed. After half an hour, we were still climbing over what were very difficult hills. It was still very warm and we were very dirty; somehow we were happy inside knowing that we were about to get bathed and to obtain fresh water for the remainder of the trip. After nearly an hour we arrived in a canyon and looked up at a few palm trees that sprouted on the mountainside a hundred meters overhead. Rima told us that the well was located in a small flat spot near the palms. After climbing up to the water source, we found to our utter dismay only about a gallon of water in a concave part of the flat area. The bottom was full of green fungus. We could not have been more disappointed. Rima scooped off what water she could without disturbing the mucky green bottom and half filled a two-gallon plastic jerry can. The smell of the water was sulphurous and rotten, but Rima insisted that it was safe to drink. Desperate, we did, and no one had any problem. Our total water supply was now rather meager, and we consumed it sparingly during the rest of the trip.

The long walk back to the campsite was depressing, the idea of a "bath" having so raised our spirits, and at one point on a narrow ridge, Christa lost her footing and nearly fell down the steep slope leading to a canyon far below. With the fatigue and this near miss, Christa could only sit and cry from nervousness. We managed to calm her, and after a short rest continued slowly back to the camp.

We looked about to find a good spot to put our sleeping bags, as was usual each night, and at this site there were some inviting sand slopes at the base of a mountainside, about twenty meters away from the campfire. After arranging the sleeping bags we prepared soup and some canned food. And, as always, we had tea and coffee to sip while eating, while talking and watching Ahmed knead the dough for bread.

Not long after falling asleep I was awakened by the sound of the long run of sleeping bag zipper, and I turned and asked Christa what was happening. She said she was too warm. Fair enough, I thought, and fell asleep. Shortly, I was awakened by the zipper sound again, this time made by Christa who remarked she was getting cold. A third time, she was too warm. It was small consolation, but I got to see the sky again. The Milky Way had shifted several degrees to my right. Several hours later, Christa unzipped the bag and said the sand was too hard and she could not sleep; beside the bag was sliding down the slope because of the nylon cover on the foam rubber pad we put under the bag. The Milky Way was now directly overhead. At last, tiredness won out, and neither zipper noise nor sliding bag could deprive me of sleep until Ahmed called us once more to get our breakfast and to pack up.

Contrary to what we had heard about desert snakes and scorpions before our trip began, we saw in fact only one scorpion during the entire trek. This is not to say they do not exist in the Sinai -- we simply did not see them. Perhaps more annoying were the wasps at the "wasp well" and in the high rocky peaks, and the flies which appeared to be everywhere. There were also scores of lizards, but

they were no more annoying than small mice in a house. While they peer at you from around a corner or from underneath a protective hideaway, they seem perfectly harmless and evoke sympathies rather than irritation.

It was extremely interesting to watch the reaction of a scorpion when put to a test by Anis. Anis made a flat mound of dirt about twenty centimeters in diameter in the center of the campfire. The scorpion was dropped into the center and was thus surrounded by fire. The scorpion scrambled to the edge of the mound, but sensing danger, he returned to the center. He then tried to escape by taking different directions, returning each time to the center. Finally, realizing that he was surrounded by fire, he ran so as to leap in desperation from the mound into the fire and committed suicide. Anis said that of the hundreds of times he has witnessed this the scorpion has behaved in the same way. If he had patience, he could have waited until the fire died out and could have crawled to safety. Another lesson for humans is to learn that patience and reason generally resolve life's problems.

I recall the fifth day as a very long camel ride, going roughly in a circular path so that we could end up back in Nuweiba. Only two or three liters of brackish water remained, a fact that seemed to add kilometers to the ride. It was essential to fight off the instinct to take "just another sip" when the going gets tough. In this instance, we were not in any danger, but we were uncomfortably thirsty.

It had occurred to me many times but I now thought profusely of Moses as well as Mary with Jesus, in their own times trekking through such barren lands as those in Sinai. Even with little imagination one could compare their lives in this environment with the lives of these very bedouin with whom we traveled. While our five days seemed at times an eternity, their weeks and months of travel through this virtually unknown (to them) territory must have indeed have been endured with severe hardship and ever-present danger.

I do not know precisely the weather pattern of this region, but rain is a rarity, and when it comes it is normally only in the winter months. From my experience of living six years in Cairo near the eastern desert, I have witnessed a total of only a few hours of rain, and this generally occurred during the period December through February. But according to Anis, there had been virtually no rain in south Sinai for the past several years. That was the reason in the last well had yielded only a few liters of very smelly, albeit safe, water. When the rain does fall on these mountains, there are real rivers that flow down the slopes -- for limited periods -- gouging the wadis and causing sand and boulders to form curious patterns and shapes along their downhill paths.

I wondered if people in the time of Moses were informed of the weather patterns from experienced travelers and made their journeys accordingly, traveling during the rainy season or in springtime when well water or residuals would have been in abundance. At St. Catherine's monastery, not far from where we were trekking and very near where Moses received the Ten

Commandments, there is a sweet water well that purportedly has existed since the monastery was constructed many centuries ago.

When there is plenty of everything, one usually gives it little thought. When there is nothing, when water is scarce or doesn't exist, one thinks of it all the time. This was our state of mind as we continued trekking during the last day.

In mid afternoon we approached a large herd of goats tended by a young woman sitting on a camel. What the goats were gnawing at was difficult to assess as there appeared to be nothing at all for them to chew. Obviously there were roots which only a hungry goat or camel could manage to find. It was odd to see this girl, alone in this remote wadi, so calmly attentive to her duties. I suppose that many would consider her a lonely creature, cruelly tasked to tend the animals. Yet it brought a comparison in my mind to another episode from my Montauk youth. There were many days when I had found myself in all sorts of weather walking long distances alone -- on the ocean beach, in the woods, on the grassy hills -- or else rowing in a small boat far out into the bay waters. I never had a feeling of loneliness or fear, but rather felt a part of the environment in which I lived. Far from being barren, life in all forms was in abundance. As fishing was the livelihood of the village there was an abundance of fish as well as many types of wild berries, grapes, beach plums, garden fruits and vegetables. But I remember the visiting "city folks" often saying, "My God! What a barren and remote place! How could anyone live here?" I never understood why they said this because I suppose I didn't know then the real meaning of their comments. Montauk was the only place I knew; it was naturally comfortable because I was born and raised in it. Only when I started high school in the nearest large town, some thirty kilometers away, did I begin to realize the meaning of the words "remote" and "isolated."

I am certain this young girl could never have been in any village greater than the size of Nuweiba, which was smaller by far than Montauk in the 1930s. She wouldn't understand the word "barren," "remote," or "isolated" any more than I did. She is content and happy alone, I thought, as happy as I had been in the outer limits of my village. Every day this bedouin girl drinks goat's milk; every day I ate fish. I rode on past her, knowing that she too was at peace.

It was about noon of the last day -- I don't remember the precise time nor does it matter -- when I noticed a camel and its rider quickly approaching from a distance on our left quarter. As they came nearer and into sharper focus, I felt I had been cast in "A Thousand and One Nights." Atop a magnificent camel, draped with brightly colored trappings, was a bedouin of perhaps forty years of age, wearing the typical turban of wrapped cloth and a long black coat over a galabiya. In photos, books, magazines, and in films, I had seen numerous deserts, tribesmen, horsemen, and camels. But just before me at that very moment was a genuine bedouin tribesman in all his splendor, approaching our small caravan at an easy gallop.

Words cannot adequately describe the excitement caused by this apparition as he reined his camel in alongside Anis. As it turned out, Mohammed, the name of the rider, and Anis were long-time friends.

A short while after Mohammed joined us, we stopped for midday camp. As on the previous day the heat of the noon sun was fierce, and because the thought of getting everything together for a meal at a hot fire was something less than inviting, we instead munched on nuts and dried fruits and sipped tea. In the meanwhile, without any words, Mohammed untied his flour sack from the rear pommel of his saddle. Ahmed, also without words, brought his aluminum basin over to Mohammed who dumped flour into it and started to mix the flour with water that Ahmed was pouring. Steadily, with experienced hands, Mohammed continued to knead the dough until satisfied it had the right consistency. As I watched I imagined that there must be a custom among these bedouin which imposed a rule to share material possessions and to contribute a share of labor. I recalled that Mohammed had also gone in search of roots and twigs to make the fire. Having found little to burn, he climbed a leafless acacia tree and, with a large rock in hand, broke sections of dried out branches which later served as the basis for the camp fire. Well, I thought, this is really not so different from our customs. My non-bedouin friends and I also helped each other, though perhaps not in such complete silence as Mohammed and Ahmed performed their chores. The needs are so basic, the daily actions required for survival so repetitive that words actually are unnecessary.

Did this somehow have religious connotation? In moments like this, or when riding, or when facing the stars just before sleep, I was reminded of the stillness that occurred before and after masses I had served when a youngster. When I had felt compelled to communicate I whispered so as not to disturb the serenity and to show respect in a house of worship. People of faith, I now reflected, almost always preserve the sanctity of holy space by respecting the unwritten code of silence. So it was in this remote desert mountains.

As our camel safari came to an end, I thought repeatedly of how enormously grateful I was to have had the solitude to think clearly as I paralleled the daily happenings of those five days with similar circumstances in my past. I was grateful to have shared with the bedouin their wilderness, most certainly a holy wilderness.

SOME REMARKS ON THE CAMEL

Arthur Silva White

Editor's Note. A feature of this *Newsletter* will be to focus on the sometimes significant, sometimes inconsequential, but always fascinating travel accounts to be found in the Library of the Cairo Center. As an illustration of those holdings and as a companion piece to Paul Cook's article, we are here reprinting excerpts of a chapter in Arthur Silva White's *From Sphinx to Oracle*, a recounting of White's forty-day journey by camel from Cairo to Siwa and back, undertaken in the spring of 1898. White's book was published in London in 1899. White, a British author and editor, whose *The Development of Africa* appeared in 1890 and *The Expansion of Egypt* in 1899, had hoped to reach Jarabub, "the Mecca of the African continent" and "stronghold of the Senussi." He got as far as Siwa. He was accompanied by seven men (all bedouin) and six camels.

Paul Cook would probably agree with White's claim that "to fully realize the desert, one must travel far into its solitudes and drink deep of its silence. When the restless movements of the human maelstrom fade from the mind, when the clattering tongues of Babylon find no echo in the memory, the spirit of the desert enters the heart of the wanderer and takes possession of it."

For ease in reading, the original punctuation has been changed to reflect current practice.

This narrative would be incomplete without some remarks on the camel. Having lived with him in close, too close, association for six weeks, I learnt to look upon the camel as the companion of man. Not that the camel is in any sense companionable.... On the contrary, he is a beast in every sense of the word.

I feel very strongly on the subject...not because I am ungrateful to the useful and ugly brutes that served me so well, but because I find lacking in the camel that sense of proportion, of moral fitness, of morality itself without which no beast, however useful, however handsome, can claim our indulgence....

The camel is, in fact, an antediluvian monster. He does not walk like other quadrupeds. On the contrary, he moves his near-legs and off-legs in unison. This he does simply to annoy you, to make it uncomfortable for you to ride him.... The gait of the camel is so peculiar that I cannot pass it over in silence. He walks like a man who, with a pair of slippers on his feet, slowly paces up and down the confined space of his bedroom buried in thought and with hands thrust deep into his side-pockets. It is a slatternly, slovenly, shambling gait. To all appearance, the hind-legs kick forward the forelegs out of sheer ill-temper....

To be more precise, this is how the camel-pads mark the desert, commencing with that of the left fore-foot. The left-fore and the right-hind feet and the right-fore and left-hind feet [touch] the ground simultaneously. This series of

foot-marks covers about six feet of ground; there is, therefore, about one-and-a-half feet between each impress and each series, with about 72 strides to the minute and 36 repetitions of the series of four-footsteps. It used to amuse me to work out these distances and to compare them with my route map. The rate indicated was two-and-a-half miles an hour.

The thud with which a heavily laden camel drops to its knees is painful to hear. But you need waste no sympathy on him; he looks well after himself. Wherever his body or legs come in contact with the ground he has a comfortable cushion or pad to rest upon. He collapses like a portable music stand.

When you mount your *hagin*, you are chucked forward and pitched back into your seat as you rise, the same process taking place in dismounting. You cannot be too careful. Occasionally, too, this malicious beast rises or falls suddenly in the hope of upsetting your balance -- so vindictive is he.

On being loaded the camel keeps up one constant groan or complaint, not necessarily because the load is heavy but systematically and on principle.... The sound of their groaning is of a very varied and aggravating character. Sometimes it resembles the grunt of a pig, sometimes the roar of a lion, and occasionally the noise is exactly that of the dregs of a bath passing through the escape pipe....

It was amusing to see my camel approaching a bush of *hashish* with the stealthy tread of the villain in melodrama. He went straight for that, but when on the road doing his duty, he serpentine about as much as he dared. So weak-minded was he on this subject that he may be said to have suffered from *hashish dementia*. If, on the other hand, he had to pass *hashish*, he sidled by with one eye on it, like a lady strolling down Regent Street.

In short, the camel is a nasty, growling, grumpy beast. His habits are antediluvian; his manners are the same. He is a contemplative, ruminative, speculative quadruped, more fitted for the desert than for the polite society of the animal world. You may respect him for his virtues as the help-mate of man, and all that sort of thing, but you cannot love him for his faults. I admit he is intelligent, but he is not an animal for which any affection can be felt. On the contrary, he is a self-satisfied drudge and as self-contained as a London flat.

He goes about with the sneer of a superior person, a stereotyped expression due, no doubt, to his heavy drooping upper lip and flattened nostrils. He is never in a hurry -- being far too aristocratic -- and is most deliberate in all his actions. On the march he looks about him either regarding the scenery as if the desert belonged to him or hunting for *hashish*. And when he turns round, as he sometimes does, to gaze at you on his back, he coolly observes you with that deliberate, appraising, and offensive stare affected by ladies who use a *lorgnette*. But on the

march he will go for hours and hours at the same plodding pace until he drops from exhaustion: the prototype of dogged perseverance as distinguished from genius.

The camel is well named "the ship of the desert" to hide the colour of which his worn out, second-hand looking hide closely approximates. As week succeeds week and one's course, carefully steered from port and port, lengthens out, one feels really to be traversing trackless wastes though camel tracks are distinctly visible on the stone-strewn desert. With his long neck pointing forward, resembling the figurehead of a ship, the swaying action to which one has to accommodate oneself like a "nodding mandarin," readily recalls the motion at sea. It is said even to cause *mal de mer*, but that I did not experience, being a good sailor. In a strong breeze with the wind whistling past and the camel occasionally shaking himself, the analogy is still closer. Moreover, one carries everything necessary for the support of life on board one's transport. If the camel succumbs to the stress of travel or founders in the soft sand, one is shipwrecked indeed....

It was most interesting to watch the development of Fluffy, the baby camel. From the first day she fell in behind her mother, caravan style. She exactly imitated the action and evinced the characteristics of her grown-up companions, only that with each stride her well poised headed nodded pertly and daintily, and for hours at a

stretch she would occupy herself in the vain but persistent attempt to secure natural nourishment. Sometimes, too, she would gambol about like a lamb...pull the tail of a camel or dart under its belly. Occasionally she would trot up to the men and put her soft muzzle into their faces. In fact, she had the most winning ways and was the pet of the caravan. Less commendable were her nocturnal habits, especially those of sniffing round my tent or patrolling the camp like a policeman. She was, of course, most inquisitive and mischievous. Nothing was sacred to her, not even the inside of my canvas castle.

We were all very pleased that Fluffy survived the journey, though none expected it, and many times I thought she would succumb. Being worth only about four dollars her value was not considerable, and she could not be expected to bear a load for fully four years. I once gave her a cigarette box to carry for the honor of the thing, and on our return to Cairo I decorated her with the fastening of my *kuffir* made into a necklace of which she seemed very proud.

I regret not being able to give the camel a better character. They and the cook were the only members of our party to whom I refused to give a testimonial. But Fluffy partly redeemed all camelkind in my eyes, and Abu had his *bakhshish* to console him.

in Egyptian Folklore: An Anthropological Study of Symbols in an Egyptian Village"

Ibrahim El-Nawawy (Egyptian Antiquities Organization, Cairo), "Projects of the Egyptian Antiquities Organization"

Hasan El-Shamy (Indiana University), "A Tale-Type Index for the Arab World and Its Significance for Studying Cultures"

Earl L. Ertwell (University of Akron), "Foreign Prisoners Depicted on Ramesside Chariots: A Continuation of Kingly Authority"

James Evans (Sikorsky Aircraft Division of United Technologies), "Numerical Criticism and Egyptian History"

John L. Foster (Roosevelt University), "'The Shipwrecked Sailor': Prose or Verse?"

Joel Gordon (University of Michigan), "Turncoats, Sell-Outs, and Eggheads: Egypt's Liberal Intelligentsia at Its Moment of Truth, March 1954"

John Gulick (with Kimberly Faust, Rebecca Bach, Saad Gadalla, Hind Abu Seoud Khattab, University of North Carolina, Chapel Hill), "Mass Education, Islamic Revival, and the Population Problem in Egypt"

Christopher J. Haas (University of Michigan), "From Roman Alexandria to Muslim al-Iskandariyyah"

William Hamblin (University of Southern Mississippi), "*Swords of the Mamluks*"

David H. Hansen and Donald P. Ryan (Pacific Lutheran University), "The Schwartz Collection of Egyptian Plants"

W. Benson Harer, Jr. (Imhotep Society, San Bernardino), "A Do-It-Yourself Medicine Kit for Egypt"

James E. Harris and Edward F. Wente (Ann Arbor and the Oriental Institute, University of Chicago), "The Nineteenth Dynasty: A Family Profile from the Biologic Viewpoint"

Michael Allen Hoffman (University of South Carolina), "1986-87 Investigations at Hierakonpolis"

James K. Hoffmeir (Wheaton College), "A Preliminary Report on Some Unpublished Coffins with Coffin Texts"

Susan T. Hollis (Harvard University/Radcliffe College), "Nut in the Pyramid Texts"

Michael Jones (American Research Center in Egypt), "The W'bt of Apis in Memphis during the Ptolemaic Period: The Archaeological Evidence"

Kathleen R. Kamphoefner (Northwestern University), "Is Literacy a 'Basic Need'? Attitudes of Illiterate Women of Cairo"

Joan Knudson (University of California, Berkeley), "A Question of Paint: An Investigation into Traces of Paint on the Reserve Head from the Tomb of Ka-nofer"

Hamid R. Kusha (University of Kentucky), "Fatimid Egypt: The World System Potentiality of the Irano-Ottoman Historical Bloc"

David Makofsky (San Francisco State University), "The Economic Rationalization of the Firm in a Developing Country: An Egyptian Case Study"

Alice Shoger Mawdsley (Sweet Briar College), "Egypt's Eternal Drama: An Analysis of The Triumph of Horus"

Richard C. Martin (Arizona State University), "Kalam, Ay? Some Thoughts on Religious Discourse in the Ninth to the Eleventh Centuries"

Edmund S. Meltzer (Claremont Graduate School), "A Rare Coptic Exemplar of II Maccabees in the Savery (formerly Crosby) Codex"

William J. Murnane (University of California, Berkeley), "Son of Amun"

David O'Connor (University Museum, University of Pennsylvania), "The Old Kingdom Town at Buhen"

Jean-Marc R. Oppenheim (Columbia University), "Twilight of a Levantine Ethos: The Alexandria Sporting Club, 1890-1960"

Patricia Plaice (University of Toronto), "Inscribed Objects from Tell el-Maskhuta"

Daniel C. Peterson (Brigham Young University), "Creation and Emanation in Two Arab Neoplatonists"

Jacke Phillips (University of Toronto), "An Unplundered Post-Meroitic Grave in the Dongola Reach, Sudan"

Robert K. Ritner (Oriental Institute, University of Chicago), "Horus-Shed - A Reinterpretation"

James F. Romano (The Brooklyn Museum), "Egyptological Activities of The Brooklyn Museum"

*SPEAKERS AND PAPERS AT THE ANNUAL MEETING,
MEMPHIS, APRIL 24-26, 1987*

Nettie K. Adams (University of Kentucky), "The Furnishings and Ritual Objects of a Newly-Discovered Temple from Qasr Ibrim, Nubia"

Dorothea Arnold (Metropolitan Museum of Art, New York), "The Work of the Metropolitan Museum of Art, New York, at Lisht, Egypt"

Mohamed Suliman Ayoub (King Abd al-Aziz University, Riyadh), "Relations between Egypt and Its Neighbors during the Reign of Ramesses II, 1290-1224 B.C."

William D. Barry (University of Michigan), "The Emperor and the Crowd: A New Perspective on Roman Alexandria"

Bob Brier (Long Island University), "A Gold Foil Text of the Lake Scarab of Amenhotep III"

Edwin C. Brock (University of Toronto/Canadian Institute in Egypt), "Paintings in the Chapel of Itet, Meydum"

Dorothea Cole (Sonoma, CA), "The Roles of Women in Medicine"

Ralph Coury (Fairfield University), "'Arabian' Ethnicity and Egyptian Arab Nationalism: The Case of 'Abd al-Rahman 'Azzam"

Eugene Cruz-Uribe (Brown University), "The Fall of the Middle Kingdom"

John C. Deaton (Richmond, VA), "The Signification of a Hwt Being Named Sb't-Hw.f-wj as a Verification of the Function of the Great Pyramid and Some Ignored Evidence for the Luminous Ba in the Old Kingdom"

Boyce N. Driskell (Prewitt & Associates), "The Architecture of a Newly-Discovered Temple at Qasr Ibrim, Nubia"

Marianne Eaton-Krauss (Westfälische Wilhelms-Universität), "Tutankhamun at Karnak"

El-Sayed El-Aswad (University of Michigan), "Symbols

Ann Macy Roth (Museum of Fine Arts, Boston), "The Central Planning of Old Kingdom Cemeteries"

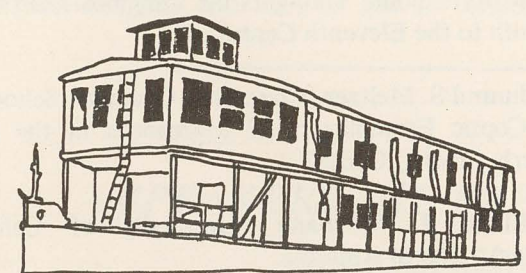
John B. Rutherford (Rutherford & Chekene, Consulting Engineers, San Francisco), "Ancient Egyptian Construction: Engineering Analysis"

Donald P. Ryan (Pacific Lutheran University), "A Reassessment of the Archaeological Work of Giovanni Belzoni"

Elizabeth Shannon (University of Kentucky), "The Master Sculptor in the Amarna Tombs"

David Silverman (University Museum, University of Pennsylvania), "The Chapel of Kapure in the Collection of the University Museum"

NEWS FROM CAIRO



Winter and Spring 1987.

PARTY, PARTY, PARTY

The holiday season extended into January at the Cairo Center with a festive reception for visiting A R C E president **Robert Fernea**. The library was packed with people eager to say "hello" to Bob, to see and smell the Christmas tree, and to enjoy the spectacular array of "goodies."

SEMINAR SERIES

The Wednesday late afternoon seminars held in the A R C E library provide A R C E fellows, affiliates, and other speakers with a forum for their research findings and the chance to hear both kudos and criticism from their colleagues. The sessions are also pleasant social occasions frequented not only by fellows but also by A R C E friends eager to learn about such diverse topics as "Verbal Art and Literary Art in the Arab World -- A Folklorist's Perspective" (**Sabra Webber**, A R C E Fellow, Ohio State University, December 3) and "The Emergence of the Druze Faith in Fatimid Cairo and Subsequent Development in Greater Syria" (**Robert Betts**, A R C E director, Cairo, December 10). Seminars continued in

Stuart Tyson Smith (Museum of Culture and History, University of California, Los Angeles), "Is Askhut the Heh of Sesostri III's Boundary Stela?"

Jaroslav Stetkevych (University of Chicago), "The Poet as Pastor of the Stars: A Pastoral Motif in Classical Arabic Poetry"

Suzanne Pinckney Stetkevych (Indiana University), "Regicide and Retribution: A Reexamination of the Mu'allaqah of Imru' al-Qays"

Noel Sweitzer (Southern California Chapter of A R C E), "It's Not Pitiful to be Popular"

January with an overflow crowd to hear Chicago House director **Lanny Bell** discuss "Salvaging the Monuments at Luxor" on January 14 and on January 21 to listen to **Muhammad Siddiq**, Fulbright fellow and professor of comparative literature at the University of Washington, consider "Cultural Encounters in Modern Arabic Fiction." After a February breather the seminars resumed during March and April with nary a break in the schedule until Shem en-Nessim. On March 4, **Denis Sullivan** of the University of Michigan addressed the issue of "Political Economy of Aid-based Development: Egypt's Dependence on American Aid." **Mariam Kamish**, doctoral candidate in Egyptology at University College, London, talked about "Mapping Ancient Memphis" on March 11. The following week, **Daniel Brumberg** of the University of Chicago spoke on "The Relevance of the Study of Intellectual History to the Study of Political Development in Contemporary Egypt." March seminars concluded with **Clarissa Burt**, also from the University of Chicago, discussing "Pre-Islamic Poetics: The Northwest Semitic Context."

The University of Chicago continued its dominance of the spring series when **Farouk Mustafa** lectured on "Mikhail Ruman and Political Theater in Egypt" on April 1. On April 8, **Richard Adams**, Research Fellow at the International Food Policy Institute in Washington, D.C., addressed the topic "Worker Remittances from Abroad and Rural Development in Upper Egypt." **Frank Mullaney**, doctoral candidate at Harvard University, concluded the April schedule with his consideration of "The Ulema and Contemporary Egypt."

The above recitation of topics surely illustrates the broad areas of research undertaken by current A R C E fellows and affiliates.

ARCHAEOLOGY CLUB

This major outreach activity of the Cairo Center is imaginatively and energetically directed by **Angela Jones**, A R C E's Archaeological Program Coordinator, who organizes lecture courses, individual lectures, and enticing trips for Cairo residents. Response to Archaeology Club events is enthusiastic and continues to be a very positive way for A R C E to serve the non-academic (less academic?) Egyptian and expatriate communities.

Monthly lectures are given by scholars on their current work in Egypt, emphasis being on archaeological studies. When possible, field trips follow lectures. In December the well-known and popular author and lecturer **Jill Kamil** got 45 people into gear for Christmas by talking about and visiting Coptic Cairo, especially those areas connected with legends of the Holy Family. In January Dr. **Geoffrey Martin** of the Egypt Exploration Society delivered an illustrated lecture on "Maya, Treasurer of Tutankhamun," the focus of his recent excavations at Saqqara. That, too, was followed by a field trip. Dr. **Richard Fazzini**, curator at The Brooklyn Museum and A R C E board member and director of excavations at the Temple of Mut at Karnak discussed those excavations at the February meeting of the Club. His intriguing lecture title: "In Search of the Lady of the Lake."

The March meeting of the Archaeology Club featured Professor **Wilfred Griggs**, who, in a lecture titled "Seele: Pyramid and Cemetery," talked about the excavations of Brigham Young University in the Fayyum. In April the Club went to the Apis Embalming House for a talk and a visit. The May session was held at the Egyptian Museum where Dr. **Ted Brock**, director of the Canadian Center in Cairo and currently an A R C E fellow, discussed the royal sarcophagi.

Lecture courses have been equally well received. Organized in conjunction with the Community Liaison Office of the United States Embassy, they always draw substantial attendance. **Angela** and **Michael Jones** provided an answer to the winter blahs by repeating their popular fall course on "The Age of the Pyramids." It features eight lectures and two field trips. For Cairenes already overdosed on pyramids, **William Lyster** offered a course of eight lectures and six walking tours as an "Introduction to the Islamic Architecture of Cairo." The series traced the development of the Islamic monuments of Cairo from the Arab invasion of 641 until the nineteenth century, focusing on the human motivation that inspired their construction.

Getaway Weekend: The end of January proved to be an inviting time to escape from the madness that is occasionally Cairo, as the Club's weekend at the Fayyum was quickly oversubscribed; as a consequence, it was happily repeated in February. The Joneses led the groups on explorations of the Temple of Qasr Sagha and the town of Dime, both in the vicinity of Lake Qarun, and Medinet Madi, a desert city to the south. Relaxation and good food awaited the trippers at the Auberge Fayyum Hotel.

As the popular courses on "The Age of the Pyramids" and "Introduction to the Islamic Architecture of Cairo" wound down in early March, interest in a new mini-course was quickly generated. Four sessions on "Contemporary Issues in Egypt" were scheduled for mid March to mid April and included two lectures by **Muhammad Siddiq**, who traced the changing image of Egyptian reality in novels from the 1940s to the present, a showing of two **Elizabeth Fernea** films followed by a discussion of the same, and a concluding lecture by **Laila Kamil** on rural developments and social behavior.

A seminar on "Life in Rural Egypt, Ancient and Modern" preceded the very successful three day March outing to the sites of Tell el-Amarna and the painted tombs of Bani Hassan and Tuna al-Gabal. Participants were comfortably housed at the new Etap Nefertiti Hotel in Minya and were ably guided by **Angela** and **Michael Jones** and by **Laila Kamil**, A R C E's director of development and currently a doctoral candidate at Columbia University.

SEEN AT THE CENTER...

Among the many winter visitors to the Cairo Center were **Michael Hoffman**, director of the University of South Carolina's Expedition to Hierakonpolis, who stopped by December 1. Director of the University of Chicago's Oriental Institute (and A R C E board member) **Janet Johnson** and her archaeologist husband **Donald Whitcomb** were here doing research between academic terms. **Kent Weeks** of the University of California, Berkeley, was on his way to direct the eighth season of the Theban Mapping Project during which the spectacular rediscovery of the tomb of the sons of Ramesses II was made. As noted earlier, the Cairo Center enjoyed a January visit from A R C E president **Bob Fernea**, substituting the mild Cairo winter for the mild Texas climate. Another welcomed visitor was **Bertram Betts**, father of Bob. Now we all know where Bob gets his energy and drive. **Benson Harer**, A R C E board member and president of the Imhotep Society, stopped by on his way to do research at Luxor, **Shirley Be** from the New York office was here in late February, and **Wilfred Griggs** and **William Phillips** from Brigham Young University were here en route to direct the Silah Expedition in the Fayyum. In the late spring, **Candy Keller**, assistant professor at the University of California, Berkeley and another A R C E board member, came through on her way to Luxor where she was photographing tombs, and A R C E Life Member **Bill Needle** and his wife and two daughters were here on a visit from Southeastern Missouri State University. A R C E doors are always open to visitors from Chicago House, and we're delighted that regulars **Lanny Bell** and **Carlotta Maher** remember to sign our book. We were also pleased to welcome **Andrea Rugh**, former Cairo resident and an anthropologist/writer currently living in Yemen where her husband is the United States ambassador.

CHEERS FOR VOLUNTEERS

Nobody needs to be reminded that A R C E's work is carried out with limited funding. All of us wish it were otherwise. But one of the pleasant solutions to limited resources is to make use of volunteer help available in the community. In Cairo, there's a generous expatriate community, many of whom volunteer their time after they have become involved with A R C E via the Archaeology Club -- its trips, courses, or lectures. A noted alumna of this elite group is Sally Mathews, wife of Bill Mathews of Hughes Aircraft who returned to California in February after a long tour in Cairo, much of it devoted to helping A R C E. We are grateful to all of these wonderful helpers.

Another frequent volunteer and ardent A R C E fan of recent memory is Nancy Sherman, who, unfortunately, will be returning to the States in early summer. While here, Nancy spread the word among the expatriate community about the splendid opportunities awaiting them at A R C E, and recently sent us this note:

"One of the greatest joys of living in Cairo these past three years was discovering the American Research Center. Through its lectures series and field trips I came to understand and appreciate -- and be enthusiastic about -- Egypt's rich history and culture.

"I attended fascinating series of lectures on pharaonic history, the Giza pyramids, Cairo through its Islamic architecture, Arabic literature, and more. Many of these lectures were followed by field trips which provided a satisfying visual dimensions to what I heard earlier.

"Viewing Egyptian monuments is obviously a must for anyone who lives here or comes as a tourist, but visiting them with A R C E scholars who willingly share their knowledge and enthusiasm is a very special privilege. I am only one of hundreds who enjoyed that privilege these past three years. A R C E has truly made Egypt's past and present come alive for me. I will miss it very much."

Thanks, Nancy. We will miss you too.

AMBASSADOR AND MRS. WISNER HOST RECEPTION

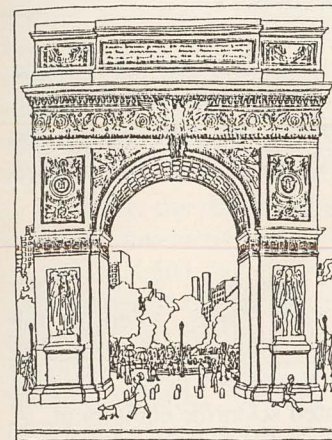
Another happy festive occasion for A R C E was the reception in its honor hosted by Ambassador and Mrs. Frank Wisner at their Zamalek residence on April 14. Over 100 guests gathered to toast the American Research Center in Egypt, among them officials of the Egyptian Antiquities Organization, the Ministry of Education, the Ministry of Tourism, the Ministry of Foreign Affairs, and other government officials who so ably and willingly facilitate the work of researchers affiliated with A R C E. It was a splendid evening.

THE FOSTAT IS BACK IN BUSINESS

Thanks to a generous loan from the Ford Foundation, the S.S. Fostat has been fully refurbished. Those who knew the houseboat from earlier days will be the first to appreciate the many new trappings and amenities. On Saturday, April 4, an official "houseboat warming" attracted scores of visitors, and we hope that in the coming months A R C E-related visitors will take advantage of the accommodations that we can now offer on board.

On the lower deck there are three single cabins and one large double. On the upper deck there is one suite with private bath and kitchen. The lower deck accommodations share two bathrooms and the newly enlarged kitchen facility. The top deck double with kitchen and bath rents for \$25 a day; the next-door single with private bath is \$15. On the lower deck the small single is \$8 and the larger two singles \$10 per day, while the double cabin at the back goes for \$15. All public rooms (lower deck diningroom and upper deck salon and solarium are open to resident guests.

Our new suffragi, Mahmud, is there every day except Friday from 7:30 to 5:00 to serve tea and coffee. Umm Na'ima comes three times a week to do washing. In other words, we are ready to accept your bookings and look forward to hosting you aboard the Fostat in what must be one of Cairo's most atmospheric and comfortable facilities. As Bob Fernea said in his April 4th cable, "Here's to the Fostat with the mostat." *Ahlan wa sahan.*



THE NEWS FROM NEW YORK

Office Move.

The U.S. office of the American Research Center has moved from Columbia University to a new home at New York University. The move took place at the end of June. After a long search for new quarters, New York University, thanks to the efforts of long-time board member and A R C E participant R. Bayly Winder, made a very generous offer of space and hospitality -- the sort of offer that happily could not be refused. The new offices are located in the attractively designed Kevorkian Center, on Washington Square, and the Center will now be more easily accessible by subways and taxis than were the old offices at Columbia. For those wishing to contact us by mail or phone, here's the change of address information:

The American Research Center in Egypt
New York University
New York, NY 10003
Telephone: (212) 998-8890

One of the sad aspects of this move is that Shirley Be, who has been the A R C E secretary for the last three years, has decided to stay at Columbia, which is a more convenient commute for her, and she recently accepted the position as administrative assistant of Columbia's Middle East Institute. We thank Shirley for the efficiency and loyalty exhibited during her time with us, and wish her well in her new position.

Since A R C E is leaving Columbia University, which has been its home since 1980, all of the staff wish to thank the directors of the Middle East Institute, which provided space, for its hospitality over the years. When A R C E first settled in at Columbia, it was at the invitation of J.C. Hurewitz, then director, who was succeeded by Richard Bulliet. Both have served on A R C E's board, and we wish to express our profound thanks to the Institute for hosting us and looking after our interests during the last seven years.

Annual Meeting in Memphis.

The one hundred and fifty A R C E members or so who made their way to Memphis for the annual meeting this year, held April 24-26, were able to choose among fifty-five presented papers, covering the whole range of Egyptological/Egyptian studies. The conference participants were beholden to A R C E board member Rita Freed, head of the Institute of Egyptian Art and Archaeology at Memphis State University, for heading the local arrangements committee -- this on top of everything else she was doing last spring: curating the magnificent Ramesses the Great exhibition at the Memphis Convention Center and organizing an international symposium on Ramesses the Great.

All three events ran back to back.

The Institute played host to the A R C E membership at a reception on Friday evening, April 24, and guests were treated to warm hospitality and excellent hors d'oeuvres while being serenaded by a Memphis State University quintet under the aegis of Leonard V. Ball, Jr., professor of music. They played a special work that was said to have been inspired by ancient Egypt, appropriately titled, "Reflections on Rippled Water."

On Saturday night 176 A R C E members and guests boarded the "Memphis Queen," a lovely old-time paddlewheeler, for the annual banquet. For two-and-a-half hours, the steamboat plied the Mississippi as the sun set over Memphis, and not a few of us may have thought ourselves on the Nile. Addressing the membership this year were Paul Walker, former executive director and now a full-time teacher at the Institute of Islamic Studies, McGill University, who talked about A R C E's future and suggested approaches to resolving recurrent problems, and John Harkins who gave an talk on the ties between Memphis and its ancient namesake. Dr. Harkins, a native of Memphis, illustrated his often amusing remarks with slides depicting Memphis' Egyptological interests from the late nineteenth century to the present.

Next year A R C E will hold its annual meeting in Chicago, and we are looking forward to being the guests of the Oriental Institute and the Middle East Center at the University of Chicago.

Election of a New President and Executive Officers

During the Memphis conference, David O'Connor, who has been Vice President for the last three years, was elected President, succeeding Robert Fernea who has served since 1984. Dr. O'Connor is Associate Curator of the Egyptian Department at the University Museum and Associate Professor in the Department of Oriental Studies, both of the University of Pennsylvania, and is currently codirector of the Pennsylvania-Yale Expedition to Abydos. Prof. Afaf Marsot, who has been an A R C E board member for many years and has served as director of the Gustave von Grunebaum Center for Near Eastern Studies at the University of California at Los

Angeles, was elected Vice President. Lewis Staples, a vice president of Manufacturers Hanover Trust in the International Division, was elected Treasurer to succeed Jere Bacharach, now retiring from the Board after many years service to A R C E. The term of office for elected officers is three years.

In addition to Lew Staples, Carl Petry, professor of history at Northwestern University, is a new face on the Executive Committee. Carl's work is on the Mamluk period of Egyptian history.

The outstanding work done by Bob Fernea during his tenure as president was noted with a warm vote of thanks and commendation by the Board of Governors in Memphis, and the presence on the Board of both he and Jere Bacharach, who have worked tirelessly and selflessly for the organization, will be sorely missed.

The next meeting of the Executive Committee will be during the Middle East Studies Association meeting, this year being held in Baltimore November 14-18.

Standing Committees

At the Board of Governors meeting in Memphis it was decided to reconstitute the Archaeology and Research Expeditions (A & R E) Committee and the Publications Committee, both of which are provided for in the By-Laws.

The A & R E Committee:

Any project proposing to operate under A R C E "auspices" or under direct A R C E "sponsorship" must be approved by A R C E's A & R E Committee.

To operate under A R C E "auspices" means that A R C E undertakes to represent the project in dealings with Egyptian authorities and to facilitate the project's other activities in Egypt. Institutional members, it should be noted, are required to contribute an additional \$150 as a project affiliation fee, and non-institutional (or non-Research Supporting) members must pay a \$650 affiliation fee per season. To operate under A R C E "sponsorship" means that A R C E is the sponsoring as well as the representative and facilitating institution for a particular project. A R C E can accept gifts (which are tax deductible) for both types of projects, and a five percent overhead charge is levied to cover administrative costs. A R C E is also able to accept federal or institutional grants for both types of projects, subject also to a five percent overhead charge.

The A & R E Committee's responsibility is to approve all archaeological and research projects that are sponsored by A R C E or operate under its auspices. Review and endorsement by the Center has scholarly and practical importance. All parties with actual or potential reasons to undertake research work in Egypt that falls within the stated interests of the A R C E are encouraged to consider participation in the Center's program. A complete description of the proposed project will be reviewed by the A & R E Committee, which will examine it with a view of endorsing it by the A R C E at large.

Directors of ongoing projects are reminded that projects remain subject to annual review by the A & R E Committee. Each project head is required to submit

reports to this committee and a description of the next season's work for committee approval.

The Publications Committee:

This committee will approve all manuscripts to be published with the A R C E imprimatur. Approval will mean that the work falls within the interests of the organization and that the Center will seek outside funding support, if required.

People in the News.

Kent Weeks made a splash in A R C E's hometown paper, *The New York Times*, when in the Science section of the 24 February 1987 issue it devoted its lead article to the work of the Berkeley Theban Mapping Project and its use of sophisticated scientific equipment. A report of the Project is found elsewhere in this Newsletter. Dr. Weeks hopes to return for a longer season in Luxor early next year.

Following the goings-on in Memphis, *The Wall Street Journal*, another hometown paper, spotlighted the Egyptological interests of Memphis with an article "Pyramid Power: Egyptomania on the Mississippi." Its Leisure & Arts column, written by Pam Lambert, featured a sketch of Rita Freed resting against the base of the gigantic statue of Ramesses. The article pointed out that visitors to Memphis could "room with Ramesses" at a local inn, could eat a "Ramsburgers," or read about erecting a 32-story golden pyramid arena, costing \$48 million, on the riverfront. The story went on to describe how enterprising Memphians put together the Ramesses the Great show and sold 300,000 advance tickets.

(This exhibit will stay in Memphis until the end of August and will then move on to Denver, Boston, and other places. The Ramesses colossal statue is scheduled to travel to Denver, we have heard.)

While many A R C E members were visiting Memphis in conjunction with the international symposium on Ramesses the Great, a number were interviewed or quoted by local reporters. In a column headed "Ramscene" in *The Commercial Appeal* (26 April 1987), a reporter caught up with Ogden Goelet and asked him his impression of Ramesses. He was quoted, "I like to tell my students the greatest love affair of all time was not between Romeo and Juliet or Antony and Cleopatra but between Ramesses II and himself."

Ibrahim el-Nawawy, director general of the Egyptian Antiquities Organization and a special guest of A R C E at the annual meeting, mentioned in the same column how flattered his countrymen were by the city's proposal to build a pyramid arena on the bluff of the Mississippi. If they succeed, Gamal Mokhtar, chairman emeritus of the E A O, said, he hoped Egypt would be able to send an exhibition called "Builders of the Pyramids."

The grand musical offering at the Temple of Luxor in ancient Thebes was followed with great interest by the national media and *The Times* (reported, we have been informed, by A R C E member Nimet Habashy), and in its coverage (4 May 1987), Lanny Bell, director of Chicago

House, described how he found present-day Luxor "a festival, as it was in the days of the Pharaohs." There had been some concern that the archaeological sites would be damaged by the crowds attending the performances of "Aida," but Lanny felt "it was important to make the monuments available to the public" and that Egyptology needed public interest while Egypt needed the money.

Certainly, the reportage in the Times and other papers made the production of "Aida" sound totally memorable. A cast of 1,500, led by Placido Domingo as Rhadames, participated in the famous triumphant scene -- where the Egyptian army returns victorious from Nubia -- this time, actually marching down the Avenue of the Sphinxes. Trumpet fanfares, galloping horses, chariots, and two lion cubs from a local circus were brought on in this and other scenes.

Also this spring broke the story (*The Times*, 29 April 1987) that the beloved Egyptian cat at the Metropolitan Museum of Art, one of the most popular sculptures in the museum, was not as old as it had been thought. In fact, it is now considered a "modern forgery." "Careful technical examination seems to point to modern manufacture," said Philippe de Montebello, director of the Met, as reported in *The Times*. There is another cat in the museum that remains on display and has not yet "fallen from grace."

C. Wilfred Griggs, professor at Brigham Young University, announced the discovery of an inscribed stone bearing the hieroglyphic signature of Pharaoh Sneferu, enabling archaeologists to identify the builder of the pyramid at Seila, about 90 miles south of Cairo. The date of the pyramid, which has been in doubt, has not been assigned to 2644-2620 B.C. The announcement appeared in *The Times* on 19 May 1987, also in the Science section.

Martin Isler's article, "On Pyramid Building," which appeared in *JARCE* 22 (1985), was discussed in the June 1987 issue of *Discover* magazine in its "Up Front" feature, under the headline, "Herodotus's Theory of How the Pyramids Were Built Gets a Lift."

Fifth International Congress of Egyptologists (ICE) to Meet in Cairo in 1988

We have received a communication from Prof. William K. Simpson, president of the International Association of Egyptologists, regarding the Fifth International Congress's meeting in Cairo, October 29-November 4, 1988.

During the General Assembly of the 4th ICE in Munich in September 1985, Dr. Ahmed Kadry invited the Fifth ICE to be held in Egypt in 1988. After discussion it was decided to set the time and place as October 29 to November 4, 1988, in Cairo. Opening session, Saturday, October 29, morning; closing session, Thursday, November 4, afternoon. Papers read in several simultaneous sections daily from 9-13 hours and 15-18 hours. Dr. Kadry will advise us of the meeting place later, and indicated the

possibility of either the Arab League or the Arab Socialist Union, both near Tahrir Square. Technical equipment for projection will be provided.

Organization of the 5th ICE: Dr. Kadry will appoint a Cairo Congress Office to work under his personal direction.

A circular letter will be distributed 1 July 1987 to all Egyptologists according to the addresses in Dr. Karig's IDE, inviting participation for Preliminary Registration before 1 October 1987.

A second circular letter, including the Preliminary Program, will be distributed 1 January 1988, asking for final registration and the submission of Abstracts before 30 March 1988. In order to save time and expense, the circular letters and all official announcements of the Congress will be published in Arabic and English only.

Thanks to a generous offer by Dr. Kadry, students will not have to pay any registration fee, and ordinary members will pay a limited registration fee of \$50.

Hotel accommodations: After considerable discussion, it was decided that members will be responsible for their hotel and lodging arrangements on their own or through travel agents of their choice. The Congress will not be able to assist in this matter. Abstracts will be published for distribution at the beginning of the Congress. Proceedings will probably be published in the ASAE. To reduce the number of papers read at the Congress, space will be provided for posters and photographs. Book stands for publishers will be established by the Congress office.

Post Congress tours: The Congress office will arrange full day post-Congress excursions on Friday/Saturday, November 5/6, which will be offered at no charge or a nominal charge to all participants. These will be arranged for Sakkara, Fayyum, Tanis, Alexandria, Hierakonpolis, and Islamic Cairo. Dr. Kadry has offered participants free entrance passes to all monuments, valid until 19 November 1988.

The International Students Association of Egyptology: Report 1987

We have received the following communication from Jacke Phillips, c/o The Egyptian Department, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, Canada, M5S 2C6:

During the Fourth International Congress of Egyptology held in Munich in 1985, students from several countries met and formed the International Students Association of Egyptology (I.S.A.E.). The Congress president, Dr. W. Kelly Simpson, kindly allowed us to announce our establishment formally at the closing session. At last year's A R C E meeting in Washington, I passed on the announcement to this side of the Atlantic, as I had been the only student from North America present in Munich. Since then, many of our initial problems and organizational questions have been further clarified and resolved through ongoing correspondence, our aims specified, and a newsletter begun. After a year and a half,

the I.S.A.E. has now solidified its organization and is able to solicit membership publicly.

The I.S.A.E. is an international umbrella organization by and for graduate and undergraduate students of Egyptology. Our main purpose is to improve individual and institutional contact between Egyptology students internationally, and to address and help improve problems commonly facing students in both practical and academic matters.

In practical matters, our basic aim is to promote greater awareness of current students and their activities. With this in mind, the I.S.A.E. quarterly *Newsletter* is intended to disseminate information by and for students worldwide, and to allow expression of ideas and views of its members. The I.S.A.E. also concerns itself with a central administration of subjects and titles and current theses and dissertations, which will be published regularly. Students will thus be able to contact each other. Information on their work and participation in conferences, exhibitions, excavations, and other activities will also be announced. By such means we hope to encourage correspondence between individual members, thereby initiating a student scholarly network.

The I.S.A.E. headquarters are currently in Leiden, where the *Newsletter* is published. Three issues have appeared thus far. The first was sent to interested students who attended the Munich congress; the second, to a limited number of institutions worldwide (in order to estimate interest). Now, with members in ten countries, sufficient interest has been generated to convince us that our horizons may be widened. The third issue of the *Newsletter* has just been published. Due to financial constraints, it cannot be sent to everyone, but a two-page brochure will be sent to as many relevant institutions as possible to stimulate further response.

In order for news of student activity to be published, it must first be collected. Please write us so we can send you a form telling us about your activity and interests. We plan to publish the responses in a directory of student activity for our membership. Requests, as well as comments, views, suggestions, and information regarding future conferences, exhibitions, and other Egyptological activities in your area should be sent to:

The Editor, *I.S.A.E. Newsletter*
Institute for Egyptology
P.O. Box 9515
2300 RA Leiden
The Netherlands

Membership is open to both students and non-students. Dues are \$5, which covers four issues of the *Newsletter*.

Job Listings

Curator, Oriental Institute Museum (University of Chicago). Duties: supervise museum and extensive collection of ancient Near Eastern antiquities, coordinate museum staff and services, administer federal and private grant programs, plan and raise funds for future museum development. Required background: Ph.D. in Near

Eastern art or archaeology, at least five years' experience in museum work and administration, ability to work with research faculty and with public and to coordinate professional staff. Salary dependent on qualifications. Job to begin October 1, 1987. Applications, including *curricula vitae*, should be mailed to Office of the Director, Oriental Institute, 1155 East 58th Street, Chicago, Illinois 60637, to be received not later than August 1, 1987.

Call for Papers

Second Colloquium of the International Society for the Study of Settlement Archaeology in the Nile Valley

This conference, which was to have been held in Boston over the weekend of 28th August 1987, has been postponed to August of 1988.

Topics of discussion will include: Method and Theory in Settlement Archaeology; Survey and Excavation Reports; Micro-Spatial Studies; Ethnoarchaeology; Computers in Spatial Analysis; Cultural Resource Management.

For further information, contact Peter Lacovara, Department of Egyptian and Ancient Near Eastern Art, Museum of Fine Arts, Boston, Boston, MA 02115.

Seminar on Commitment, Detachment and Objectivity in Contemporary Historiography of Egypt, 1919-1952

The Netherlands Institute of Archaeology and Arabic Studies, Cairo, in conjunction with the Department of History, Cairo University, the Department of Arabic Studies, University of Amsterdam, and the National Center for Social and Criminological Research, Cairo, have announced the above-mentioned seminar, to be held in Cairo, 31 August - 2 September 1987. The coordinator is Dr. Ahmed Abdalla.

A Conference on Women of the Ancient Near East is to be held November 5-7, 1987 at Brown University. Fourteen papers have been invited, six by Egyptologists. For more information, call or write Department of Egyptology, Box 1899, Brown University, Providence, RI 02912, telephone: (401) 863-3132. Conference director is Barbara S. Lesko.

Al-Masaq: Studia Arabo-Islamica Mediterranea. Scholars devoted to the study of all aspects of the Arabo-Islamic Mediterranean Culture (8th-14th centuries) are invited to send manuscripts to be considered for publication in this newly established journal. The first volume is to appear at the end of 1988. Send manuscripts to: Dr. D. Agius, Centre for Arabo-Islamic Mediterranean Studies, 11 Parkers Hill, Tettsworth, Oxon. OX3 7AQ, England.

New Publications Announcements

E.S. and M.H. Kennedy, *Geographical Coordinates of Localities from Islamic Sources*. 777 pp., 1987. "A listing of 2,500 placenames, with coordinates, collected from 74 sources, published and manuscript, dating from the second

through the sixteenth centuries. The main listing is alphabetical, according to the Latin alphabet, but giving also the original Arabic characters. Ancillary listings are by source, by increasing longitudes, and increasing latitudes. The introduction describes the sources and attempts an analysis of the data." From the Institut für Geschichte der Arabisch-Islamischen Wissenschaften, Johann Wolfgang Goethe Universität, Frankfurt am Main, Beethovenstrasse 32, D-6000 Frankfurt 1, Federal Republic of Germany.

U.S. Director.

After a long search for a new U.S. director to succeed permanently the position vacated by Paul Walker, the Board of Governors officially confirmed Terence Walz as the director during the annual meeting in Memphis. Terry has been acting director since January and has liked

IN REMEMBRANCE

Klaus Baer

Klaus Baer, professor of Egyptology at the Oriental Institute of the University of Chicago and former president of the American Research Center in Egypt, died of heart failure in Chicago on May 14, 1987. He was 56.

His Egyptological interests and expertise were quite varied. His book, *Rank and Title in the Old Kingdom*, grew out of his Ph.D. dissertation for the University of Chicago. In recent years he had done extensive work on Egyptian chronology, trying to reconcile the many sources from which our knowledge of sequence and absolute dates of kings is derived. He had also worked on Egyptian economics, including such topics as taxation and land prices, especially for the New Kingdom. But his real love was language, especially the stages of the ancient Egyptian language, the rudiments of which he had taught himself before he started graduate school at the age of seventeen. Within the field of philology he worked both on theoretical topics such as Egyptian phonetics and the relations between Egypt and relative (Afro-Asiatic) languages and on practical matters such as the detailed workings of different stages of the language. He had been working for several years on both a reference and a teaching grammar of Coptic, the latest stage of Egyptian. His students and colleagues will miss his frequent exact and detailed handouts updating our knowledge of each of these fields.

Baer first worked in Egypt from 1952 to 1954 when he was a Fulbright Fellow and participated in excavations at Saqqara and Giza, working closely with Professor Ahmed Fakhry. In 1969 he served as epigrapher with the Hierakonpolis excavations. As president of A R C E from 1981 to 1984, he committed himself to a trip to Egypt each winter to get to know the various Egyptian officials who make possible A R C E's various projects and fellowship programs; during these trips he also visited various A R C E projects in progress.

Baer, who was born in Halle, Germany, and moved to the U.S. as a small child, received his B.A. in

the job so much he wished to be considered for the permanent position.

Membership News.

If you have any news to share with us, please write either the Cairo or New York director, who will be pleased to hear from you.

Membership Drive.

This coming year, which is A R C E's fortieth year since its founding, we shall be undertaking a major new membership drive, with the aim of substantially increasing our membership. If you have a friend or friends who should become members of A R C E, ask them to write us or ask us to send them a membership application.

classical Greek from the University of Illinois. He had taught for six years at the University of California, Berkeley, before joining the faculty of the Oriental Institute. He had served as chairman of the Department of Near Eastern Languages and Civilizations from 1972 to 1976. His love of the outdoors and his desire to support promising musicians led him to be a long-time supporter and member of the Board of Trustees of Rocky Ridge Music Camp in Estes Park, Colorado. He is survived by his wife, Miriam Reitz.

Janet Johnson

Elizabeth Thomas, 1907-1986

My association with Elizabeth Thomas began in April of 1980 when she came to San Francisco for the annual A R C E meeting. Since I had worked with the Berkeley Theban Mapping Project the spring before and was shortly to return to Luxor, I was quite familiar with her *The Royal Necropoleis of Thebes* which I had been studying in preparation for our last full session working in the Valley of the Kings. We were scheduled to work in many of the locked tombs and in the pit tombs for some of which her book was the only published source of information. Thanks to her groundwork, we were able to accomplish a great deal in a relatively short time. The same was to hold true for the next several seasons when we worked in less well known areas of the necropolis.

What immediately struck me about Miss Thomas, who had spent more than two decades studying the Theban necropolis on which she was the undisputed expert, was her active seeking out of new ideas and information and her willingness to give any source a fair hearing. The early maps of the Valley of the Kings had fascinated me, especially those of Richard Pococke. I had

found a version of her maps that had caused me to question her identification of the tomb plans and their locations. Because of her warmth and her obvious interest, I mentioned my disagreement and she asked me to explain my reasoning. I did this in a series of letters and soon, in a letter to Kent Weeks, she added, a P.S., "Tell C., Hollins Egyptologists lack last names." This cryptic comment took a day or two to decode, but finally we decided that I was not to address her as Miss Thomas any longer. (She and I had both attended Hollins College in Virginia, she for one year, I for four.) This informality set the tone for a frequent and often argumentative correspondence that interspersed visits to her home in Princeton. During these I would bring new information from my seasons working in Luxor and answers to some of the dozens of questions she sent along with me each spring. Sometimes I would succeed in carrying my point, often she would win me over to hers, and at times we would agree to stand by own own opinions.

During the year I knew Elizabeth, I became more and more impressed with her both as a scholar and as an individual. As a scholar, she was continually searching out new information or new interpretation of existing data. She maintained a prolific correspondence with dozens of people who had an interest in the royal cemeteries. These included students and eminent scholars from numerous

countries, engineers, architects, each meticulously given credit for their contributions, many for their differing views. She was always generous with her own information, not keeping back what was unpublished, but expecting to be given credit for what was hers. Though she was quite capable of sticking by her own ideas, she was also willing to revise or discard them in the face of new evidence or a good counter-arguments. Above all, she never wanted or expected to be the "last word" on her chosen subject, but rather a catalyst to promote further study and understanding of that subject as she stated in the introduction to *Necropoleis*. In this she was certainly successful.

Those who knew her personally will remember her warm friendliness, her humor, her inquiring mind with its many interests outside Egyptology, her generosity, independence (sometimes bordering on stubbornness), and a singleminded dedication to her field. Those acquainted only with her work will remember her for the valuable contribution she made to Egyptology. It is hoped that the second edition of *The Royal Necropoleis of Thebes*, extensively revised and augmented over the last twenty years, will be in press by the summer of 1988 so that more students and scholars will have the benefit of her work.

Catharine Roehrig, Boston, May 1987

SECURITY REGULATIONS FOR ARCHAEOLOGICAL MISSIONS

We believe some members will find it useful to be reminded that on 26 March 1986, Dr. Ahmed Kadry, chairman of the Egyptian Antiquities Organization, issued a memorandum regarding security regulations for archaeological missions. The memorandum is reproduced here but is revised in line with the subsequent change regarding the number of maps required to be submitted by mission heads:

"According to the instructions of the Security Authorities, please be informed that the security forms for all members of every mission should be submitted to E A

O all at once, not later than two months at least before the starting date of work. Any additions or new members later joining the mission will not be accepted.

"In the case of any request for work at sites which stipulate special permissions, or military areas, the mission has to submit also to E A O thirteen cadastral maps (scale 1:25,000 or 1:50,000), fixing exactly the sites requested."

We would urge archaeological field directors to utilize their local university or museum libraries for such maps, as it appears that the maps of Egypt currently available from the U.S. government are not so detailed.

NEW A R C E PUBLICATIONS

THE JOURNAL OF THE AMERICAN RESEARCH CENTER IN EGYPT

Volume 22 (1985) was published in February, and this thick issue (236 pp.), with numerous illustrations, blends Egyptological studies with research reports on Islamic and modern Egypt. Edited by Dr. John L. Foster, Volume 23 (1986) is in press, and we are hopeful that *JARCE* will become up-to-date by the end of the year.

GREEK POTTERY FROM NAUKRATIS IN EGYPTIAN MUSEUMS

Marjorie Susan Venit

Ancient Naukratis Series: Volume 4

The archaeological site of Naukratis, the most important Greek settlement in Egypt in the first half of the first millennium B.C., has posed numerous problems to the historian, the archaeologist, and the art historian. The pottery, which may be localized to a high degree, is at once an indicator of specific people (traders, if not settlers), their stage of development, chronology, and relationships not available from written records. This study makes available the vast amount of unpublished ceramic material from Naukratis that resides in Egyptian museums. The introduction provides a rationale for classification of fragments: there follows a descriptive catalog of each fragment.

Forthcoming Winter 1987 ca. 300 pp. 480 line drawings; 120 halftones ca. \$40.00

FUSTAT-C

Fustat Expedition, Final Report, Volume 2

Wladyslaw Kubiak and George T. Scanlon

With Contributions by Michael Bates, Boyce Driskell, Louise Mackie, and D.S. Richards

The two-month excavation in 1980 yielded unique evidence of proletarian housing and the first substantial cache of textile fragments and written documents during nine years' work at Fustat. Numismatic evidence providing a dating span of ca. A.D. 700-1092 permits a major reassessment of posited chronology and new insight into the socio-economic life of medieval Cairo.

Forthcoming Winter 1987 ca 100 pp. Plates Price not set

THE TOMB CHAMBERS OF HSW THE ELDER

The Inscribed Material at Kom el-Hisn

Part 1: The Plates

Ancient Naukratis Series, Volume 3

David P. Silverman

The Tomb of Hsw, located at the ancient site of Naukratis, is the largest and most significant of the monuments of the Pharaonic Period at Naukratis, and its study yields important critical material on the First Intermediate Period and the Middle Kingdom. A careful analysis of the tomb provides local variations of Coffin Texts, formulaic inscriptions, and iconographic details.

This volume consists of facsimile drawings of the raised reliefs and large hieroglyphic inscriptions carved in sunk relief on the interior surface. It includes photographs made during the recent survey as well as earlier photographs that document the lower parts of the interior walls.

Forthcoming Autumn 1987 ca. 160 pp. 131 plates ca. \$45.00

Send orders to:

Eisenbrauns,

P.O. Box 275

Winona Lake, IN 46590

Back issues of *JARCE* (prior to Vol. 18) are available from the New York office.

ARCE'S LIBRARY: GETTING IT TOGETHER

Robert Brenton Betts

One of the more interesting tasks of my many faceted job as director of the Cairo office has been the reorganization of the library. Although quite a remarkable collection it had been neglected for some time. Of its estimated 15,000-20,000 volumes only half were catalogued. Many lay scattered about the office in cardboard boxes. As behooves a research center library its central focus and finest collections are found in the journal and periodical section/serial section which dominates the main reading room. The majority of the more than 190 titles relate to archaeology and Egyptology, but a substantial number are also found in the areas of Islamic studies and contemporary Egypt. Many are complete from the first volume (which in a number of cases takes them back to before the turn of the century) and are, for the most part, handsomely bound.

The jewel in the library's crown is, of course, its prized copy of *La Description de l'Egypte*, the multi-volume large folio set published in 1809 and years immediately following by the assembly of scholars which Napoleon had brought out to Egypt with his invading force in 1798. Following his banishment in 1815 the publication of this monumental work was continued and completed under the restored Bourbon monarchy. Comprising twenty volumes in all (11 of plates and 9 of text), of which the Center's set lacks only one of the text, it was limited to 1,000 copies. On the occasion of the opening of the Suez Canal in 1869 a second edition was published, but the earlier one remains the rarest and most interesting both to the casual reader and serious research scholar.

Other rare antiquarian items in the library's collection include the Danish traveler Pederick Norden's 18th century account of his voyage up the Nile, published in two folio volumes with numerous plates and maps in 1757.

Less overpowering treasures also lurk on the shelves. When Jere Bacharach and I did an initial survey of the journal collection last September, we ran across a single copy of *La Revue des Juives en Egypte*. Published in Cairo in 1947 it was the first, and probably only, volume that appeared. On returning to the United States Jere checked around and discovered that only two other libraries appear to have copies, and that the Library of Congress isn't one of them.

Despite the large number of treasures, however, serious gaps do exist, both in the journal and serial collection, and particularly in our collection of contemporary works on Egypt and the Middle East. Acquiring them, especially the missing journal issues, is a time consuming and expensive process. The total annual budget for the library (including part-time staffing) is considerably less than \$5,000 per year. Out of this very limited resource we must pay two part-time library assistants as well as acquire new journals and books. Some, like the recently issued volume five of the *Encyclopedia of Islam*, are indeed expensive (about \$250) but absolutely necessary. Fortunately we have a number of duplicates as well as our own publications which we can offer in trade, and no small number of journals come to us this way. But keeping the latest issues on our shelves as well as acquiring missing back numbers is a never-ending chore. I believe we could be assisted very substantially by the ARCE membership, if not from cash donations, then from the contribution of books and issues of journals we need. To this end this issue of *NARCE* includes a list of our periodical and serial collection in hopes that our readers may be able to contribute to our needs. I have also prepared a list of duplicate publications or collections of journals peripheral to our principal research requirements which we would be happy to trade for those things we do need badly.

This, after all, is how the library was originally acquired. The core of its collection comes from a few large private libraries which were acquired over the years at little cost, largely as the result of the work of former librarian May Trad. But for the library to continue to be of use to our members and fellows it must be continually added to, culled, and updated. I have made this task one of my highest priorities as director, and I hope that our readers and members will help in every way they can. The finer the center becomes, the more use it will be to all of us who depend on its resources for our research.

A REFERENCE GUIDE TO THE SERIALS AND JOURNALS IN THE LIBRARY OF THE AMERICAN RESEARCH CENTER IN EGYPT, CAIRO.

30 MARCH 1987

1. ABHANDLUNGEN DES DEUTSCHEN ARCHÄOLOGISCHEN INSTITUTS KAIRO
No. 1 (1958), 3 (1963), 5 (1969); Koptische Reihe, 1 (1962), 2 (1971).

2. ABHANDLUNG DES HAMBURGISCHEN KOLONIALINSTITUTS
Band I (1910), XX (1914), XXVII (1914), XXXV (1916).
3. ACTA ORIENTALIA (Copenhagen-Societates Orientales Danica, Norvegica, Svecica)
Vols. 26-29 (1962-66), 32 (1970).
4. ACTA ORIENTALIA HUNGARICA
Vols. 23-27 (1970-1973) bound, complete; 28-32, incomplete; 33-38 unbound, complete except for 35:2; and Vol. 39 (1985), no. 1
5. AETHIOPICA (Revue Philologique)
Vol. II, no. 4 (October, 1934), & Vol. III, no. 2 (April 1935).
6. AGA KHAN AWARD FOR ARCHITECTURE
Seminar 1 (1978, Aiglemont), 2 (1978, Istanbul), 3 (1979 Jakarta), 4 (1979, Fez), and 5 (1980 Amman).
7. AGRICULTURAL DEVELOPMENT SYSTEMS PROJECT (University of California)
Economics Working Papers 42, 44, and 47 (1981)
8. ÄGYPTOLOGISCHE ABHANDLUNGEN (Harrassowitz, Wiesbaden)
Nos. 2 (1960), 7 (2 vols. 1963), 14 (1967), 16 (1967), and 30 (1974).
9. ÄGYPTOLOGISCHE FORSCHUNGEN (J. J. Augustin)
Nos. 1,2,3 (1936), 6 (1938), 11 (1940), 13 (1944), 15 (1948), 18 (1954) and 21 (1960).
10. AMERICAN-ARAB AFFAIRS QUARTERLY (Washington, D.C.)
Nos. 1 (Summer 1982)-12, 14, 15, 17 (Summer 1986).
11. AMERICAN JOURNAL OF ARCHEOLOGY
Vol. 63 (1959), nos. 2, 4; Vol. 64, 1-4 unbound, complete; Vol. 65, nos. 3, 4; Vol. 66, nos. 2, 3, 4; Vol. 67, nos. 2, 4; Vol. 68, nos. 2, 3; Vol. 69, nos. 1-4 bound, complete; Vol. 70, no. 1; Vol. 75, nos. 1-4 unbound, complete; Vol. 76, bound, complete; Vol. 77, nos. 1, 3, 4; Vol. 78, 1-4 unbound, complete; Vol. 79, 1-4 unbound, complete; Vol. 80, nos. 1, 2, 3; Vol. 81, 1-4 bound, complete; Vol. 82, 1-4 unbound, complete; Vol. 83, 1-4 unbound, complete; Vol. 84, 1-4 unbound, complete; Vol. 85, 1-4 unbound, complete; Vol. 86, no. 4; Vol. 87, nos. 2, 3, 4; Vol. 88, 1-4 unbound, complete; Vol. 89, 1-4 unbound, complete; Vol. 90, (1986), nos. 1, 2, 3.
12. AMERICAN JOURNAL OF SEMITIC LANGUAGES AND LITERATURE (University of Chicago)
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21. ANNUAL EGYPTOLOGICAL BIBLIOGRAPHY
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29. ARCHAEOLOGICAL SURVEY OF NUBIA, (Cairo)
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30. ARCHÄOLOGISCHE VERÖFFENTLICHUNGEN (Deutsches Archäologisches Institut Abteilung Kairo)
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31. ARCHAEOLOGY (Archaeological Institute of America, New York)
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Vol. 3:1-2 (1889); Vol. 3:3 (1889); Vol. 4:1, 2 (1895); Vol. 5:1-2 (1894); Vol. 5:3-4 (1894); Vol. 6:1-2 (1892); Vol. 6:5 (1897); Vol. 8:1-3 (1892); Vol. 9:1-3 (1892); Vol. 13 (1893); Vol. 15 (1894); Vol. 18 (1896); *Le Temple d'Edfou (publie en extenso)*; Vol. 10 [i] (1897); Vol. 11 [ii] (1918); Vol. 20 [iii] (1928); Vol. 21 [iv] (1929); Vol. 22 [v] (1930); Vol. 23 [vi] (1931); Vol. 24 [vii] (1932); Vol. 25 [viii] (1933); Vol. 26 [ix] (1929); Vol. 27 [x, 1 & 2] (1928 & 1960); Vol. 28 [xi] (1933); Vol. 29 [xii] (1934); Vol. 30 [xiii] (1934); Vol. 31 [xiv] (1934). All bound.

124. MEMORIAS DE LA MISION ARQUEOLOGICA EN NUBIA (Madrid)
Vols. 1-10 (1963-66).
125. MEROITIC NEWSLETTER
Nos. 1 (October 1968), 4-6, 9-12, 14-16, 18, 19, 21-24 (March 1985).
126. MESSAGES D'ORIENT (bimonthly, Alexandria)
Nos. 1-6 (April 1926-September 1927).
127. MIDDLE EAST STUDIES ASSOCIATION BULLETIN (Tuscon)
Incomplete run 1968-86.
128. MIDDLE EAST JOURNAL (Washington, D.C.)
Vols. 1-20 (1947-66), complete; Vol. 21 (1, 2, 4); 22 (1, 2, 4), 23 (1, 2, 3); 24 (1); Vol. 25 (1 & 2); 28 (3 & 4); and 39 (1985, 1 & 3).
129. MITTEILUNGEN DES DEUTSCHEN ARCHÄOLOGISCHEN INSTITUTS ABTEILUNG KAIRO
Vol. 1 (1930); 4 (1933); 12:2 & 13:1 (1943-44); 14-40 (1956-84), bound.
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131. THE MUSEUM YEAR (Museum of Fine Arts, Boston)
1967, 1968, 1969-70, 1970-71, 1972-73 (Vol. LXIX).
132. THE MUSLIM WORLD SERIES (Cairo)
Nos. 3 (*Land Tenure in Islam*), 3 (*Al-Yemen*), 6 (*Egypt*) and 7 (*Pakistan*), 1952.
133. THE NEW EAST (HAMIZRAH HEHADESH, Quarterly of the Oriental Society, Jerusalem)
Vol. 1-26 (1949-76), excepting 7:2, 8:1, 9:3, 10:4 & 15:3; plus 27:1/2 (1977).
134. NEWSLETTER OF THE AMERICAN RESEARCH CENTER IN EGYPT
Nos. 1-135 (1951-Fall 1986), complete; bound through no. 132.
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Incomplete run 1972-84.
136. ORIENS (Journal of the International Society for Oriental Research, Leiden)
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137. ORIENT (Report of the Society of Near Eastern Studies in Japan)
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138. ORIENTALIA (Faculte d'Orientalisme Ancien de l'Institut Biblique Pontifical a Rome)
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139. ORIENTAL INSTITUTE COMMUNICATIONS (Chicago)
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140. ORIENTALISCHE LITERATURZEITUNG ZUM DEUTSCHER ORIENTALISTENTAG IN HAMBURG
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141. ORIENTE MODERNO (Rome)
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142. ÖSTERREICHISCHES ARCHÄOLOGISCHES INSTITUT GRABUNGEN (Vienna)
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159. REVUE D'EGYPTOLOGIE (La Societe Francaise d'Egyptologie, Louvain)
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160. REVUE DE L'EGYPTE ANCIENNE (Paris)
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190. JOURNAL OF THE INSTITUTE OF ARAB MANUSCRIPTS (Kuwait)
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191. ARAB HERITAGE NEWSLETTER (Issued by the Institute of Arab Manuscripts, Kuwait)
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194. EGYPTIAN RELIGION (Alma Egan Huatt Foundation, New York)
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195. A HANDLIST OF ARABIC MANUSCRIPTS IN THE CHESTER BEATTY LIBRARY, by Arthur J. Arberry.
8 volumes. Dublin, 1955. Bound.
196. MUQARNAS (An Annual on Islamic Art and Architecture) Yale University.
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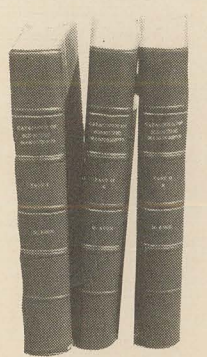
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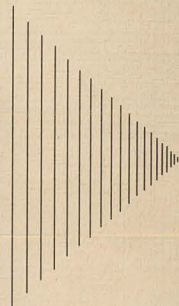
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